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C65-4732

Reference No. 64-2020

BELLCOMM, INC.

TR-64-209-4

LUNAR ORBIT RENDEZVOUS REFERENCE

TRAJECTORY DATA PACKAGE (U)

REFERENCE TRAJECTORY NO. 4
(GUIDED RE-ENTRY) **U**

Issue 4
Volume 4E

September 23, 1964

~~Available to NASA Offices and~~
~~NASA Centers Only.~~

Approved: *R.J. Wagner*
Trajectory Analysis Department

Work Performed for Manned Space Flight, National Aeronautics
and Space Administration as part of Task 9 under Contract
NASw-417

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Downgraded at 1 year intervals;
declassified after 12 years

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ABSTRACT

This report, Reference Trajectory No. 4 (Guided Reentry) is issued as volume 4E of Lunar Orbit Rendezvous Reference Trajectory Data Package (U), Issue 4. The first four volumes prepared by Space Technology Laboratories are as follows.

Volume 4A - Summary and Reference Trajectory No. 4 Data Exhibits, dated August 12, 1964, No. 8408-6071-RC-000

Volume 4B - Printout Keys and Reference Trajectory No. 4 Listing (Earth Launch to LEM Final Descent), dated August 12, 1964, No. 8408-6072-RC-000

Volume 4C - Reference Trajectory No. 4 Listing Continued (LEM Final Descent to Earth Re-entry), dated August 12, 1964, No. 8408-6073-RC-000

Volume 4D - Reference Trajectory No. 4 Listing Concluded (Re-entry), dated August 12, 1964, No. 8408-6074-RC-000

The above volumes contain a complete unguided reference trajectory including the re-entry phase. This report (volume 4E) contains a guided re-entry with the same terminal conditions as the unguided re-entry of volume 4D.

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- 1.0 INTRODUCTION - OUTPUT KEY
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- 4.0 RE-ENTRY CONSTANT DRAG PHASE
- 5.0 RE-ENTRY EQUILIBRIUM GLIDE PHASE

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GUIDED RE-ENTRY

The Reference Trajectory Data Package to which this is appended contains an "open loop" (unguided) Apollo LOR trajectory. For the powered flight maneuvers the full optimized steering orders of the "open loop" trajectory result in good first approximations to the final guided trajectories. In the reentry phase the correspondence between the "open loop" and guided trajectories is less close. The intent of this volume is to present the resultant LOR re-entry trajectory parameters as influenced by the closed loop control of the MIT re-entry guidance logic.

The guidance logic utilized is that defined by MIT as of July 1, 1964. The characteristics of the vehicle restated from Volume 4A are:

$$L/D \text{ max} = .4$$

$$\frac{W}{C_D A} = 57 \text{ lbs/sq. ft.}$$

$$W = 9500.0 \text{ lbs.}$$

ATMOSPHERE MODEL = U.S. Standard ATMOSPHERE, 1962

The re-entry phase is initiated 15,666.7 min. from lift-off. At the point of re-entry the vehicle has a longitudinal range to go of 1141.4 naut. miles and a lateral range to go of 141.6 naut. miles to reach the landing site located at 9.9 degrees S latitude, 198.6 degrees E longitude. For this range a skip from the atmosphere is not required, therefore, the re-entry profile consists of an initial full positive lift

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phase to "pull up", a second phase in which the flight profile is influenced by "constant drag" guidance and a third and final phase in which the flight profile reflects the "equilibrium glide" guidance mode.

This volume contains the printout and print key plus plotted time histories of several important trajectory parameters. The equivalent information for the "open loop" reentry trajectory is contained in Volumes 4A and 4D.

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OUTPUT KEY FOR GUIDED RE-ENTRY

X Components of the missile position in an earth centered, right handed, inertial coordinate system.

Y

Z The system is oriented such that the X-Z plane contains the true vernal equinox of date and the X-Y plane contains the equator. The Z axis passes through the north pole. (ft)

XD Components of velocity in the earth centered inertial coordinate system. (ft/sec)

YD

ZD

XL Components of the landing site position in the earth centered inertial coordinate system. (ft)

YL

ZL

ALT Altitude with respect to the Fischer ellipsoid 1960, measured along the radius vector. (ft)

R Radial distance from the center of the earth. (ft)

RDOT Component of inertial velocity along the radius vector R. (ft/sec)

VI Magnitude of the inertial velocity. (ft/sec)

FPAI Flight path with respect to VI. Angle between the inertial velocity vector and the local geocentric horizontal, positive upward (deg.)

PSIV Azimuth from north of the inertial velocity vector projected on a plane normal to the radius vector. (deg.)

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VA	Magnitude of the velocity relative to the air mass.(ft/sec)
FPAA	Flight path with respect to the VA. Angle between the air velocity vector and the local geocentric horizontal, positive upward.(deg.)
PSAV	Azimuth from north of the air velocity vector projected on a plane normal to the radius vector. (deg.)
LAT	Geodetic latitude of the vehicle position. (deg.)
LONG	Longitude of the vehicle position. (deg.)
RTGN	Right ascension of the landing site from the vehicle position vector measured in the instantaneous plane of motion. The angle is projected to the surface of a spherical earth. (naut. mi.)
RTGL	Declination of the landing site relative to the instantaneous plane of motion. The angle is projected to the surface of a spherical earth. (naut. mi.)
ACC	Magnitude of the total acceleration vector (ft/sec ²)
DRAG	Magnitude of the aerodynamic drag force acting along the relative velocity vector VA. (lbs.)
FLY	Magnitude of the aerodynamic lift force acting normal to the relative velocity vector VA and in the instantaneous relative plane of motion. (lbs.)
FLP	Magnitude of the aerodynamic lift force acting normal to the relative velocity vector VA and normal to the instantaneous relative plane of motion. (lbs.)
GLOAD	Ratio of the magnitude of the aerodynamic acceleration to the magnitude of the gravitational acceleration.

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ROLL Roll attitude. Angle between the lift vector (defined in a plane normal to the relative velocity vector) and the line of intersection of the relative plane of motion and the plane normal to the relative velocity vector. Positive 0 to 360 degrees counter clockwise as viewed from the rear of the vehicle. 0 degrees representing maximum lift up in the relative plane of motion.
(deg.)

RLDOT Magnitude of the roll rate. (deg/sec)

TAG Guidance phase indicator (1 to 6)

- 1 - guidance phase prior to initial pull up
- 2 - guidance targeting iteration phase (determines guidance strategy) This phase occurs at the point of pull up, requiring approximately 300 to 500 milliseconds of time to complete.
- 3 - guidance "constant drag" or "reference trajectory" phase. For various range requirements either one or both of these phases may be required.
- 5 - guidance atmospheric skip phase. This phase may or may not exist as ranging requirements dictate.
- 6 - guidance equilibrium glide phase

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M. I. T. GUIDANCE 1179

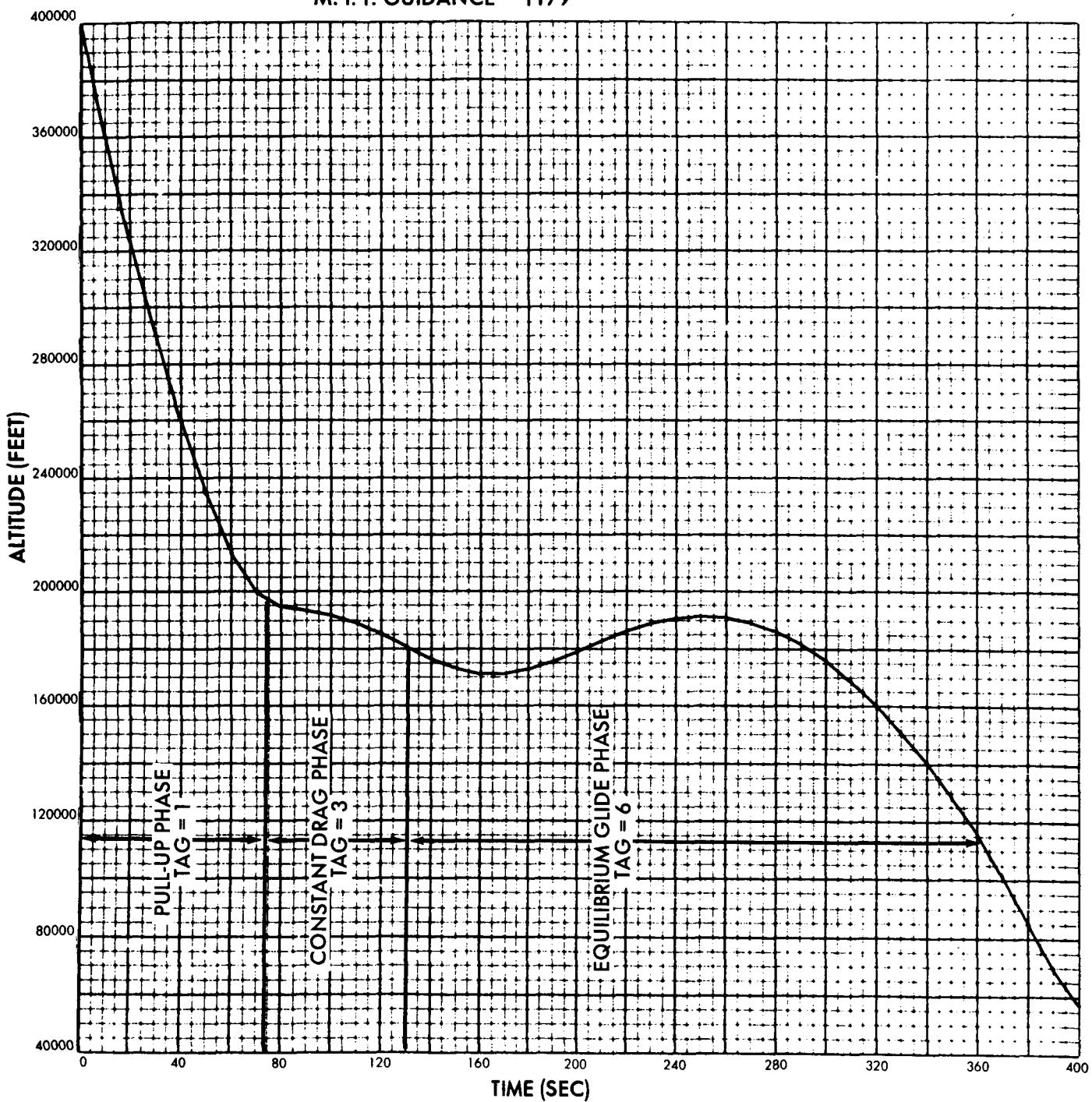


FIGURE 1 ALTITUDE

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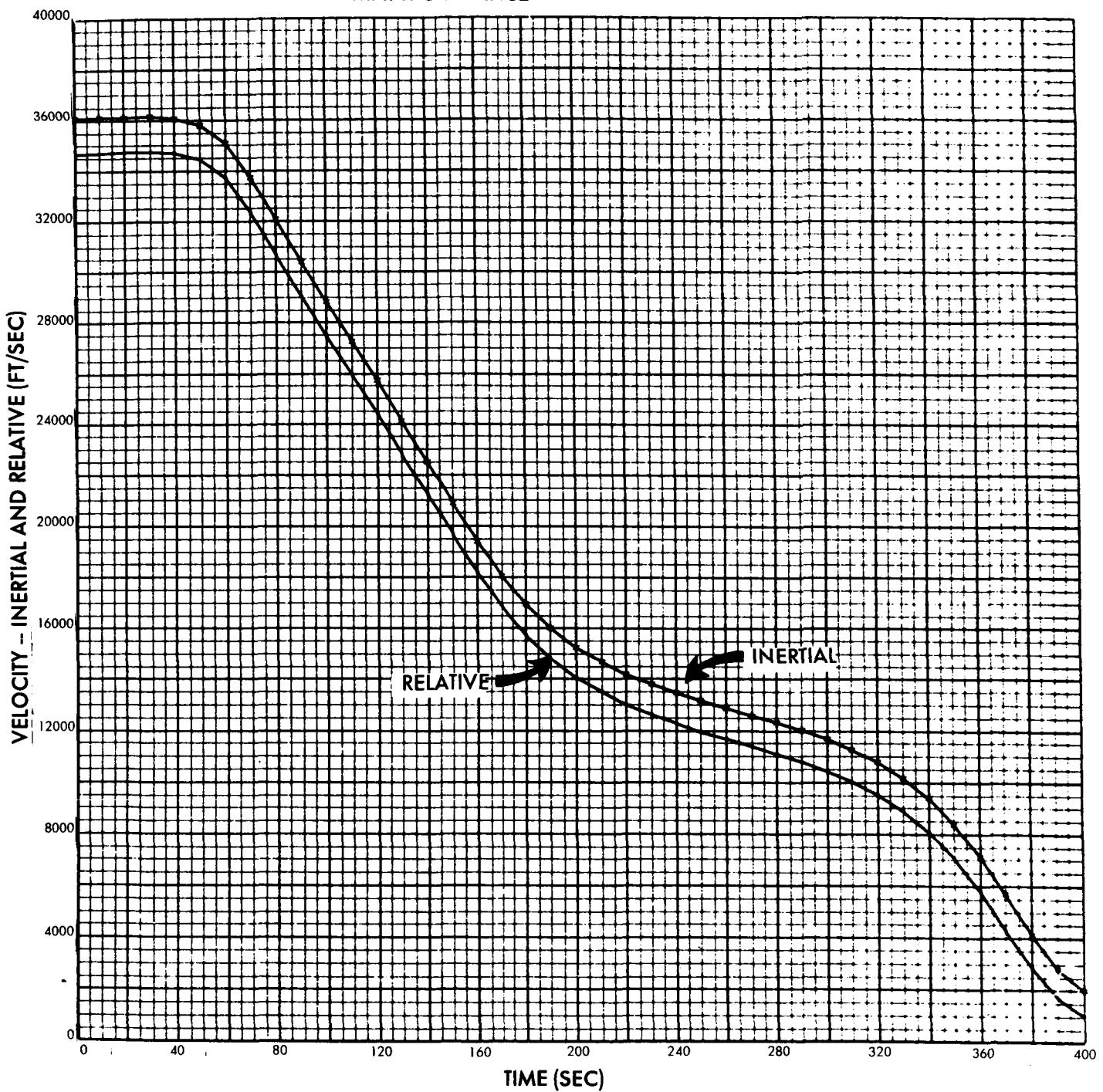


FIGURE 2 INERTIAL AND RELATIVE VELOCITY

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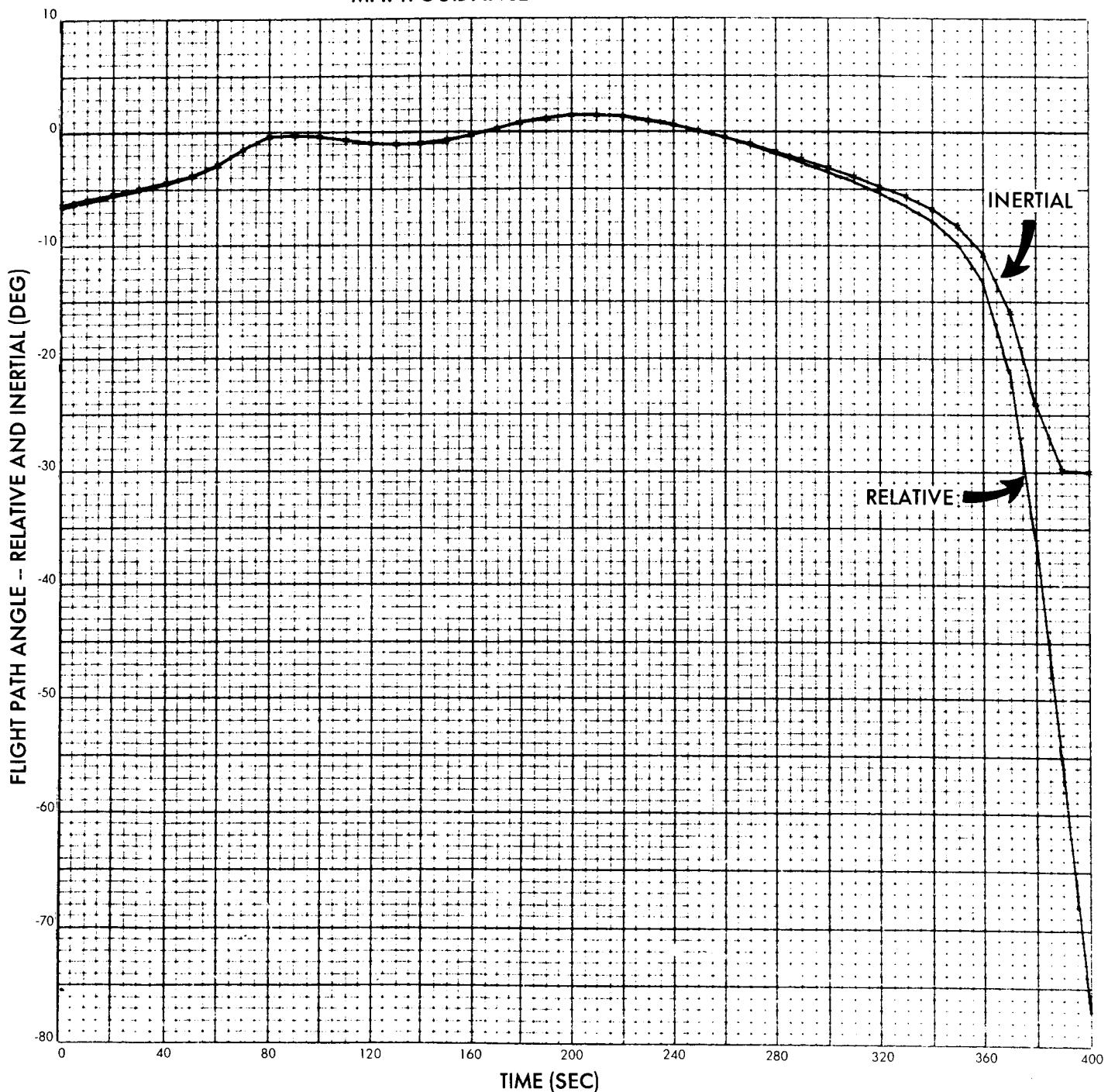


FIGURE 3 INERTIAL AND RELATIVE FLIGHT PATH ANGLE

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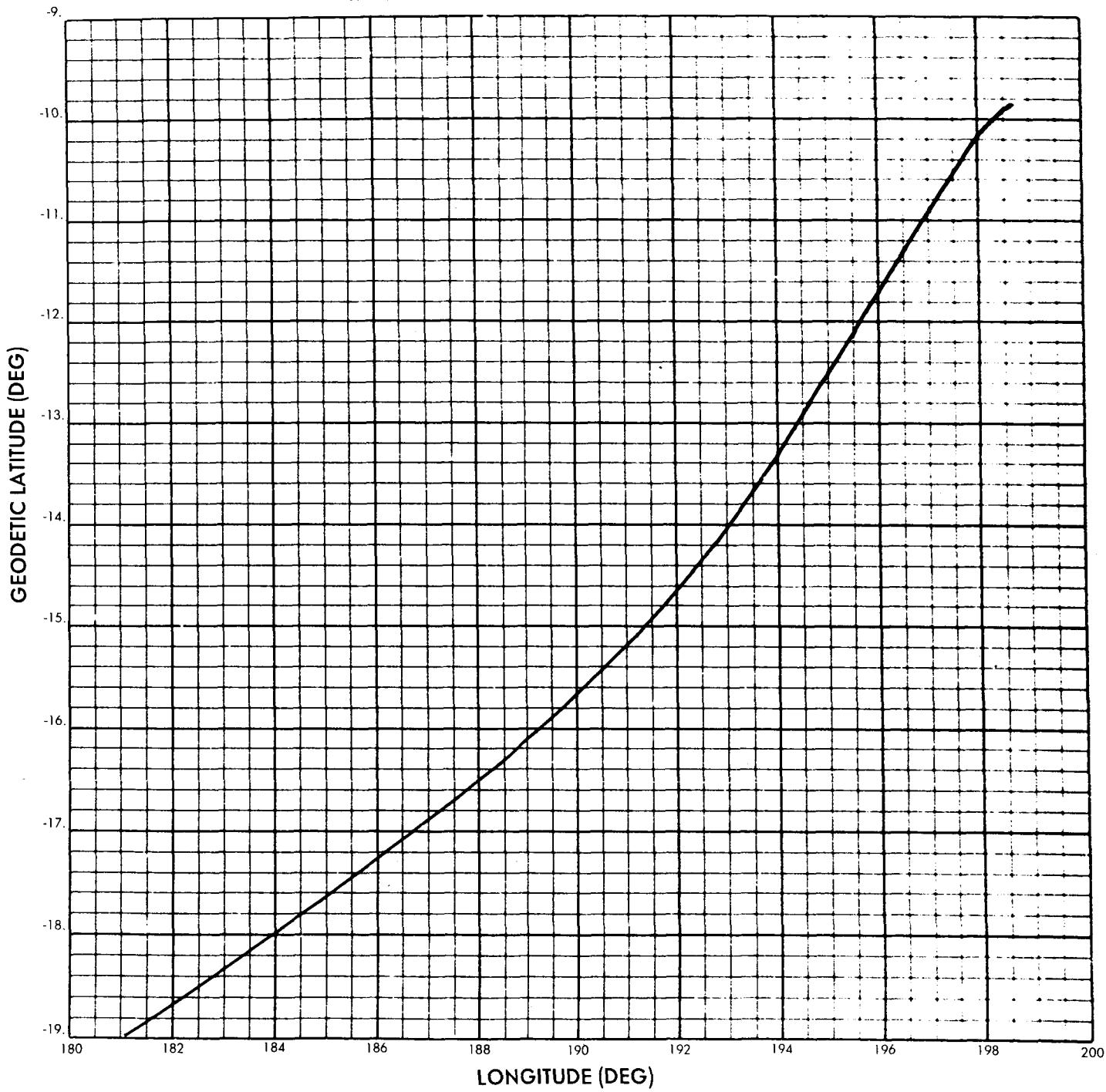


FIGURE 4 GEODETIC LATITUDE AND LONGITUDE

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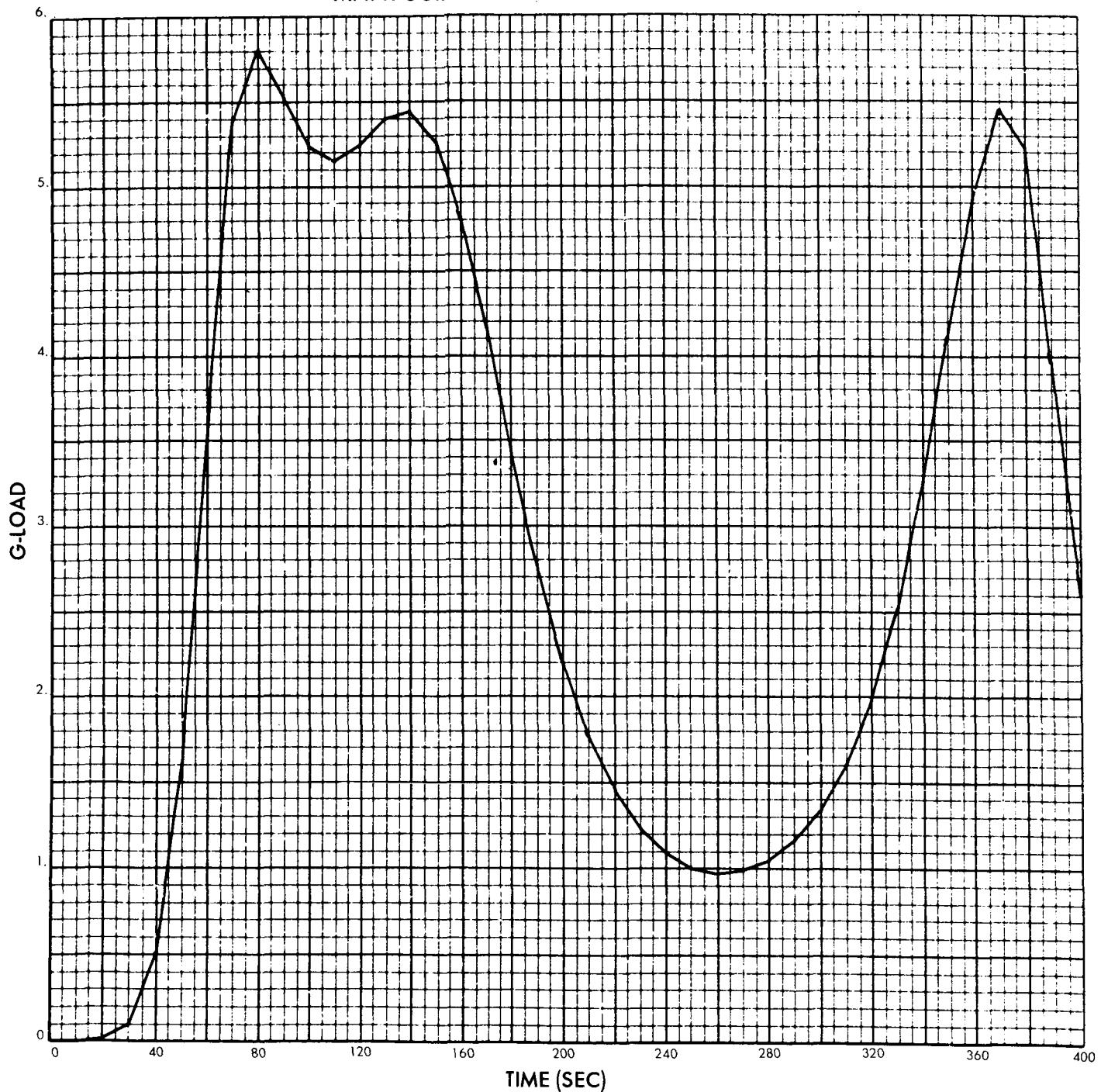


FIGURE 5 G-LOAD

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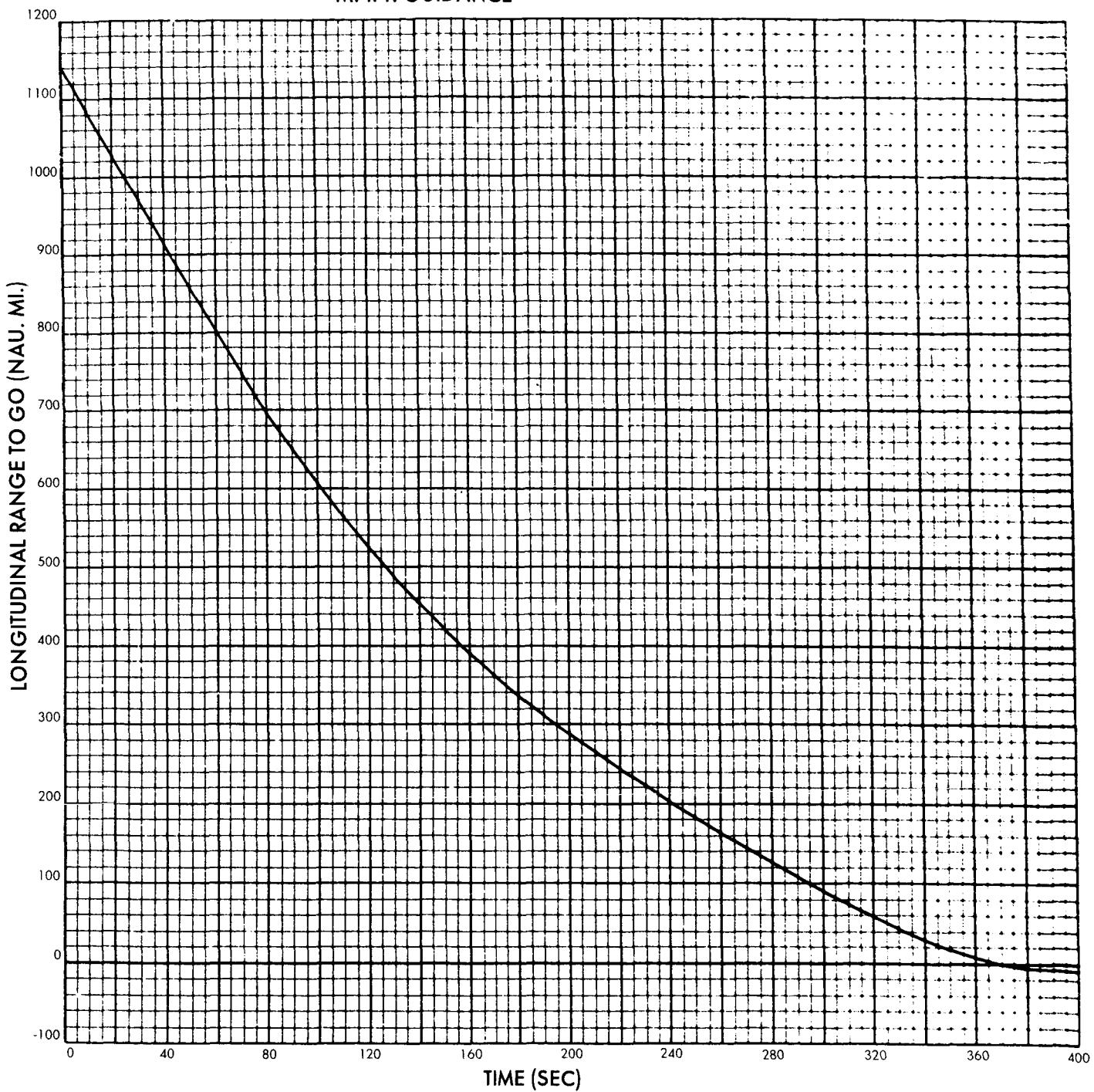


FIGURE 6 LONGITUDINAL RANGE TO GO

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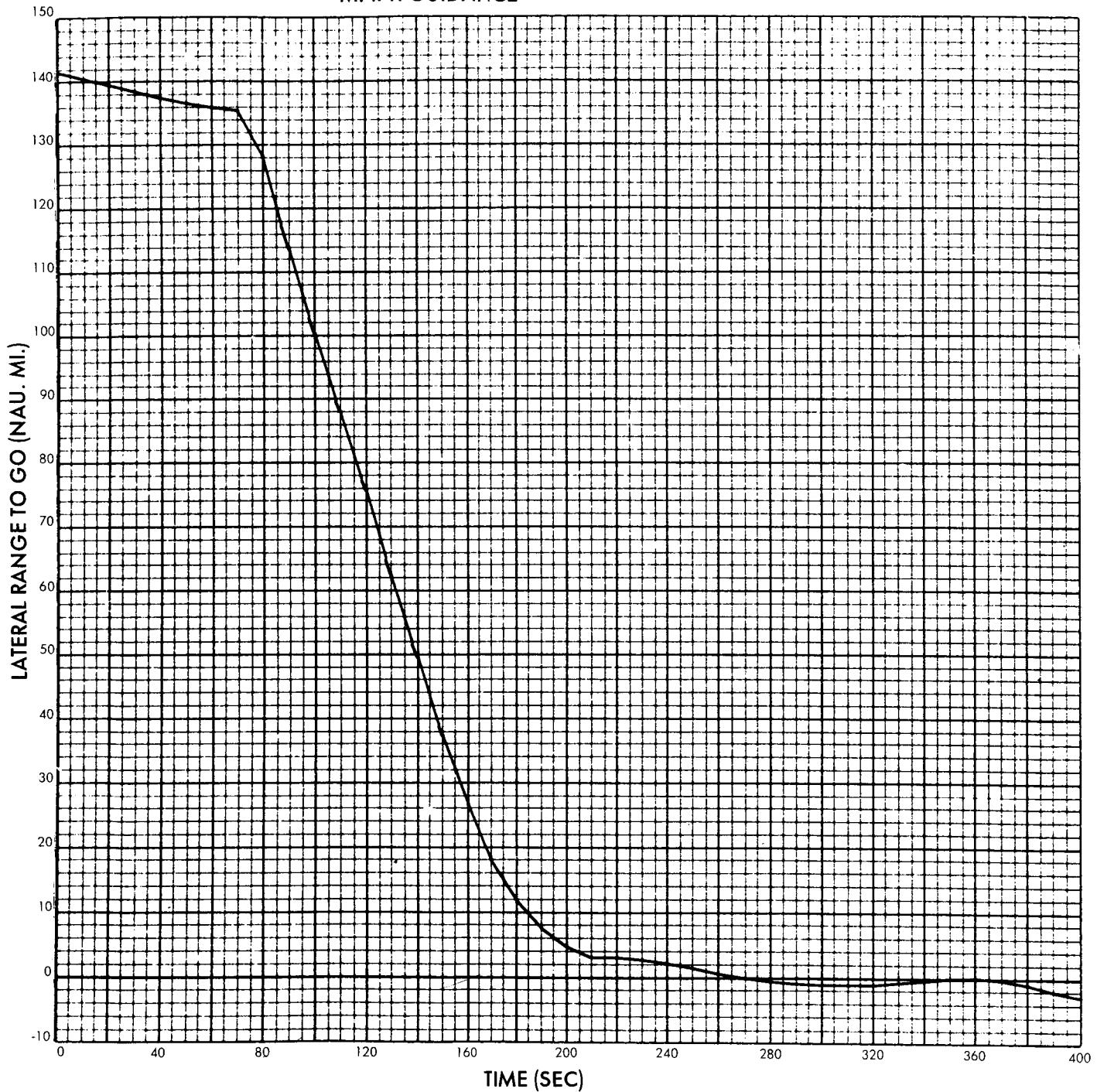


FIGURE 7 LATERAL RANGE TO GO

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M. I. T. GUIDANCE

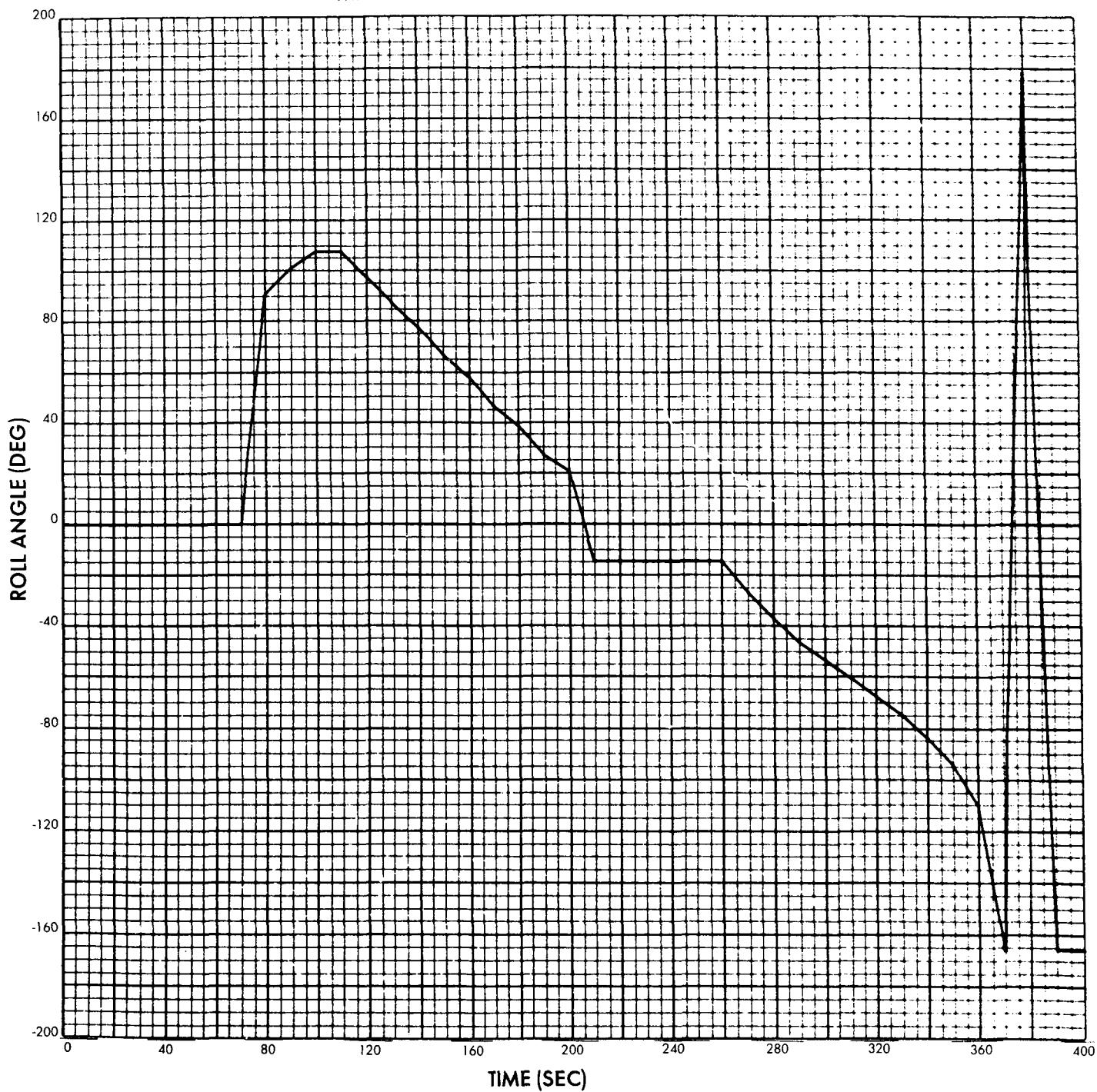


FIGURE 8 ROLL ATTITUDE

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JOB	CHBS	HEADING ANGLE	=	-0.71534897E-02	
LATITUDE OF THE RE-ENTRY POINT		-0.18974741E-02			
LONGITUDE OF THE RE-ENTRY POINT		-0.17890468E-03			
LATITUDE OF THE LANDING SITE		-0.99040593E-01			
LONGITUDE OF THE LANDING SITE		-0.16144824E-03			
L/D MAXIMUM OF THE VEHICLE		0.40000000E-00			
RAIMIN	=	0.15000000E-02	F00	=	0.30000000E-00
R1	=	0.50000000E-01	C1AT	=	0.15000000E-01
R2	=	0.20000000E-02	C1	=	0.10000000E-01
D0L	=	0.11000000E-02	CKD50	=	0.86712392E-05
HMAX	=	0.10000000E-07	CETA	=	0.10000000E-06
MIN	=	0.50000000E-05	C22	=	0.50000000E-01
DIF	=	0.50000000E-01	C5	=	0.
CKM	=	0.32200000E-03	C6	=	0.
DMIN	=	0.10000000E-01	C7	=	0.10000000E-04
DKP	=	0.10000000E-01	CK13P	=	0.20000000E-01
VTH	=	0.10000000E-04	C9	=	0.
YRCT	=	0.70000000E-03	C10	=	0.
C12	=	0.93255255E-05	C13	=	0.30000000E-05
C14	=	0.10000000E-03	RR	=	0.21202900E-08
C17	=	0.20000000E-03	C18	=	0.10000000E-04
C20	=	0.17500000E-03	C24	=	0.30000000E-02
HS	=	0.28500000E-05	CK11	=	0.20000000E-00
17					FEND = 0.20000000E-00
11					
10					
9					
8					
7					
6					
5					
4					
3					

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MOORE BUSINESS FORMS, INC.

FORM 1413 PRINTED IN U.S.A.

10 APR. 1971 19 HR 26 MIN 28.97 SEC TMST 940004.6172 J.D. 2441052.3100 10 DAY 21 HR 6.7 MIN

X = 0.13257824E 08 XD = 0.25533704E 05 ALT = 0.39999975E 06 LAT = -0.18974739E 02 VI = 0.36064672E 05

Y = -0.15206215E 08 YD = 0.22442934E 05 R = 0.21318377E 08 LONG = 0.18109332E 03 FPAI = -0.64014428E 01

Z = -0.68901622E 07 ZD = 0.12061813E 05 RDOT = -0.40209929E 04 FLP = 0. PSIV = 0.71534863E 02

XL = 0.17587700E 08 TAG = 0.10000000E 01 GLOAD = 0. FLY = 0.14505969E 01 VA = 0.34681463E 05

YL = -0.10759778E 08 ROLL = 0. ACC = 0. RTGN = 0.14156937E 03 FPAA = -0.66578848E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.36266422E 01 RTGL = 0.11413970E 04 PSAV = 0.70759842E 02

10 APR. 1971 19 HR 26 MIN 34.09 SEC TMST 940009.7344 J.D. 2441052.3100 10 DAY 21 HR 6.8 MIN

X = 0.13388430E 08 XD = 0.25434159E 05 ALT = 0.37965900E 06 LAT = -0.18816744E 02 VI = 0.36082036E 05

Y = -0.15090905E 08 YD = 0.22555985E 05 R = 0.21298150E 08 LONG = 0.16156672E 03 FPAI = -0.61585664E 01

Z = -0.68283162E 07 ZD = 0.12093156E 05 RDOT = -0.38708954E 04 FLP = 0. PSIV = 0.71375351E 02

XL = 0.17591720E 08 TAG = 0.10000000E 01 GLOAD = 0.78782076E-03 FLY = 0.32672900E 01 VA = 0.34699522E 05

YL = -0.10753205E 08 ROLL = 0. ACC = 0.310758554E 02 RTGN = 0.14106513E 03 FPAA = -0.64049458E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.81682250E 01 RTGL = 0.11128869E 04 PSAV = 0.70594687E 02

10 APR. 1971 19 HR 26 MIN 39.22 SEC TMST 940014.8594 J.D. 2441052.3101 10 DAY 21 HR 6.9 MIN

X = 0.13518522E 08 XD = 0.25333306E 05 ALT = 0.36008850E 06 LAT = -0.18657144E 02 VI = 0.36098630E 05

Y = -0.14975017E 08 YD = 0.22668374E 05 R = 0.21278701E 08 LONG = 0.18204012E 03 FPAI = -0.59151546E 01

Z = -0.67662079E 07 ZD = 0.12144118E 05 RDOT = -0.37201671E 04 FLP = 0. PSIV = 0.71217137E 02

XL = 0.17595737E 08 TAG = 0.10000000E 01 GLOAD = 0.21179561E-02 FLG = 0.79422233E 01 VA = 0.34716787E 05

YL = -0.10746629E 08 ROLL = 0. ACC = 0.31113281E 02 RTGN = 0.14056100E 03 FPAA = -0.61514086E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.19855559E 02 RTGL = 0.10843214E 04 PSAV = 0.70430038E 02

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10 APR. 1971 19 HR 26 MIN 46.22 SEC. IMSTI 940019.8594 J.D. 2441052.3102 10 DAY 21 HR 7.0 MIN

X	= 0.13644940E 08	XD	= 0.25233583E 05	ALT	= 0.34174125E .06	LAT	= -0.18499905E 02	V1	= 0.36113885E 05
Y	= -0.14861403E 08	YD	= 0.22277196E 05	R	= 0.21260470E .08	LONG	= 0.18250193E .03	FPA1	= -0.56770602E 01
Z	= -0.67053640E 07	ZD	= 0.12193313E 05	RD01	= -0.35724342E .04	FLP	= 0.	PSIV	= 0.71064062E 02
X1	= 0.17599654E 08	IAG	= 0.10000000E 01	GLOAD	= 0.52800955E-02	FLY	= 0.19040843E 02	VA	= 0.34732672E 05
Y1	= -0.10740213E 08	ROLL	= 0.	ACC	= 0.31121246E 02	RIGN	= 0.140066927E 03	FPA2	= -0.59036056E 01
Z1	= -0.35758184E 07	RD01	= 0.	DRAG	= 0.47602108E 02	RIGL	= 0.10564015E .04	PSAV	= 0.70272268E 02

10 APR. 1971 19 HR 26 MIN 49.34 SEC. IMSTI 940024.9844 J.D. 2441052.3102 10 DAY 21 HR 7.0 MIN

X	= 0.13773997E 08	XD	= 0.25129812E 05	ALT	= 0.32370425E 06	LAT	= -0.18337188E 02	V1	= 0.36120052E 05
Y	= -0.14764387E 08	YD	= 0.22087425E 05	R	= 0.21242551E .08	LONG	= 0.18297520E .03	FPA1	= -0.54320810E 01
Z	= -0.66427451E 07	ZD	= 0.12243139E 05	RD01	= -0.34200088E 04	FLP	= 0.	PSIV	= 0.70980308E 02
X1	= 0.17603667E 08	IAG	= 0.10000000E 01	GLOAD	= 0.13810022E-01	FLY	= 0.49027792E 02	VA	= 0.34747440E 03
Y1	= -0.10733635E 08	ROLL	= 0.	ACC	= 0.31053445E 02	RIGN	= 0.13951560E 03	FPA2	= -0.56999963E 01
Z1	= -0.35758184E 07	RD01	= 0.	DRAG	= 0.12256948E 03	RIGL	= 0.10277333E .04	PSAV	= 0.70111077E 02

10 APR. 1971 19 HR 26 MIN 56.34 SEC. IMSTI 940029.9844 J.D. 2441052.3103 10 DAY 21 HR 7.1 MIN

X	= 0.13899389E 08	XD	= 0.25026553E 05	ALT	= 0.304886225E 04	LAT	= -0.18176956E 02	V1	= 0.36139148E 05
Y	= -0.14629685E 08	YD	= 0.22892526E 05	R	= 0.21225825E 08	LONG	= 0.18343679E 03	FPA1	= -0.51913911E 01
Z	= -0.65814106E 07	ZD	= 0.12290382E 05	RD01	= -0.32699765E 04	FLP	= 0.	PSIV	= 0.70750121E 02
X1	= 0.17601579E 08	IAG	= 0.10000000E 01	GLOAD	= 0.35453656E-01	FLY	= 0.12531017E 03	VA	= 0.34759135E 03
Y1	= -0.10727216E 08	ROLL	= 0.	ACC	= 0.30807674E 02	RIGN	= 0.13902514E 03	FPA2	= -0.53981000E 01
Z1	= -0.35758184E 07	RD01	= 0.	DRAG	= 0.31327562E 03	RIGL	= 0.99971856E 03	PSAV	= 0.699599155E 02

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10 APR. 1971 19 HR 26 MIN 59.34 SEC TMST 940034.9844 J.D. 2441052.3103 10 DAY 21 HR 7.2 MIN
X = 0.14024257E 08 XD = 0.2491990E 05 ALT = 0.29077725E 06 LAT = -0.18015294E 02 VI = 0.36144192E 05
Y = -0.14514470E 08 YD = 0.23092218E 05 R = 0.21209856E 08 LONG = 0.18389818E 03 FPAI = -0.49469745E 01
Z = -0.65198460E 07 ZD = 0.12334757E 05 RDOT = -0.31168495E 04 FLP = 0. PSIV = 0.70609199E 02
XL = 0.17611489E 08 TAG = 0.1000000E 01 GLOAD = 0.91046982E-01 FLY = 0.32066202E 03 VA = 0.34764728E 05
YL = -0.10720795E 08 ROLL = 0. ACC = 0.30159922E 02 RTGN = 0.13858656E 03 FPAA = -0.51437881E 01
ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.00165500E 03 RIGL = 0.97166280E 03 PSAV = 0.69800589E 02

10 APR. 1971 19 HR 27 MIN 4.47 SEC TMST 940040.1094 J.D. 2441052.3104 10 DAY 21 HR 7.3 MIN
X = 0.14151679E 08 XD = 0.24804372E 05 ALT = 0.27509925E 06 LAT = -0.17848167E 02 VI = 0.36135403E 05
Y = -0.14395800E 08 YD = 0.23101946E 05 R = 0.21194297E 08 LONG = 0.18437073E 03 FPAI = -0.46870924E 01
Z = -0.64565266E 07 ZD = 0.12373677E 05 RDOT = -0.29532643E 04 FLP = 0. PSIV = 0.70458301E 02
XL = 0.17615495E 08 TAG = 0.1000000E 01 GLOAD = 0.21921065E-00 FLY = 0.77171075E 03 VA = 0.34756456E 05
YL = -0.10714213E 08 ROLL = 0. ACC = 0.28961348E 02 RTGN = 0.13809047E 03 FPAA = -0.48731235E 01
ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.19292769E 04 RIGL = 0.94287231E 03 PSAV = 0.69663622E 02

10 APR. 1971 19 HR 27 MIN 9.47 SEC TMST 940045.1094 J.D. 2441052.3105 10 DAY 21 HR 7.4 MIN
X = 0.14275395E 08 XD = 0.24679341E 05 ALT = 0.26064200E 06 LAT = -0.17683838E 02 VI = 0.36097543E 05
Y = -0.14279807E 08 YD = 0.23243372E 05 R = 0.21179956E 08 LONG = 0.18083110E 03 FPAI = -0.461171567E 01
Z = -0.63945896E 07 ZD = 0.12397919E 05 RDOT = -0.27801455E 04 FLP = 0. PSIV = 0.70313232E 02
XL = 0.17619400E 08 TAG = 0.1000000E 01 GLOAD = 0.48700104E-00 FLY = 0.17067886E 04 VA = 0.36719039E 05
YL = -0.10707789E 08 ROLL = 0. ACC = 0.28185399E 02 RTGN = 0.13761638E 03 FPAA = -0.45929069E 01
ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.42669717E 04 RIGL = 0.91476821E 03 PSAV = 0.69497006E 02

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10 APR. 1971 19 HR 27 MIN 14.47 SEC JMSI 940050.1094 J.D. 2441052.3105 10 DAY 21 HR 7.5 MIN

X = 0.14398438E 08 XD = -0.24533465E 05 ALT = 0.24710500E 06 LAT = -0.17518463E 02 V1 = 0.36007562E 05

Y = -0.14163528E 08 YD = -0.23258320E 05 R = 0.21166535E 08 LONG = 0.18529029E 03 FPAL = -0.41146399E 01

Z = -0.63325879E 07 ZD = 0.123977149E 05 RDOT = -0.25836255E 04 FLP = 0. PSIV = 0.70170992E 02

XL = 0.17623303E 08 TAG = 0.10000000E 01 GLOAD = 0.91838410E 00 FLY = 0.32166447E 04 VA = 0.34629411E 05

YL = -0.10701365E 08 ROLL = 0. ACC = 0.32029155E 02 RIGN = 0.13715983E 03 FPAA = -0.42786891E 01

ZL = -0.35758184E 07 RLDDOT = 0. DRAG = 0.80416119E 04 RIGL = 0.88668122E 03 PSAV = 3.69362057E 02

10 APR. 1971 19 HR 27 MIN 19.47 SEC JMSI 940055.1094 J.D. 2441052.3106 10 DAY 21 HR 7.5 MIN

X = 0.14520678E 08 XD = 0.24356175E 05 ALT = 0.23463275E 06 LAT = -0.17352376E 02 V1 = 0.35837242E 05

Y = -0.14047343E 08 YD = -0.23201637E 05 R = -0.21154178E 08 LONG = 0.18574740E 03 FPAL = -0.31633911E 01

Z = -0.62706747E 07 ZD = 0.12359964E 05 RDOT = -0.23521944E 04 FLP = 0. PSIV = 0.70032515E 02

XL = 0.17627203E 08 TAG = 0.10000000E 01 GLOAD = 0.15685351E 01 FLY = 0.54847501E 04 VA = 0.34459327E 05

YL = -0.10694938E 08 ROLL = 0. ACC = 0.45664916E 02 RIGN = 0.13672984E 03 FPAA = -0.39149535E 01

ZL = -0.35758184E 07 RLDDOT = 0. DRAG = 0.137111875E 05 RIGL = 0.85866363E 03 PSAV = 0.69194025E 02

10 APR. 1971 19 HR 27 MIN 24.47 SEC JMSI 940060.1094 J.D. 2441052.3106 10 DAY 21 HR 7.6 MIN

X = 0.14641926E 08 XD = -0.24134969E 05 ALT = 0.22342250E 06 LAT = -0.17186078E 02 V1 = 0.35552409E 05

Y = -0.13931681E 08 YD = 0.23043832E 05 R = 0.21143093E 08 LONG = 0.18620118E 03 FPAL = -0.33431590E 01

Z = -0.62090769E 07 ZD = 0.12269068E 05 RDOT = -0.20733336E 04 FLP = 0. PSIV = 0.69099030E 02

XL = 0.17631102E 08 TAG = 0.10000000E 01 GLOAD = 0.24366213E 01 FLY = 0.85091273E 04 VA = 0.34175588E 05

YL = -0.10688511E 08 ROLL = 0. ACC = 0.692492086E 02 RIGN = 0.13633718E 03 FPAA = -0.34781048E 01

ZL = -0.35758184E 07 RLDDOT = 0. DRAG = 0.21272819E 05 RIGL = 0.83079297E 03 PSAV = 0.69048265E 02

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MOORE BUSINESS FORMS, INC.

FORM 14-3 PRINTED IN U.S.A.

10 APR.	1971	19	HR	27 MIN	29.47 SEC	TMST	940065.1094	J.D.	2441052.3107	10 DAY 21 HR	7.7 MIN	
X	=	0.14761935E 08	XD	=	0.23658743E 05	ALT	=	0.21376550E 06	LAT	= -0.17020232E 02	VI	= 0.35127479E 05
Y	=	-0.13817116E 08	YD	=	0.22759721E 05	R	=	0.21133539E 08	LONG	= 0.18664989E 03	FPAI	= -0.28365186E 01
Z	=	-0.61480952E 07	ZD	=	0.12111783E 05	ROOT	=	-0.17383314E 04	FLP	= 0.	PSIV	= 0.69771883E 02
XL	=	0.17634998E 08	TAG	=	0.10000000E 01	GLOAD	=	0.34632343E 01	FLY	= 0.12072519E 05	VA	= 0.33749604E 05
YL	=	-0.10682082E 08	ROLL	=	0.	ACC	=	0.10030805E 03	RTGN	= 0.13599169E 03	FPAAA	= -0.29526244E 01
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.30181297E 05	RTGL	= 0.80317336E 03	PSAV	= 0.68905233E 02

10 APR.	1971	19	HR	27 MIN	34.47 SEC	TMST	940070.1094	J.D.	2441052.3107	10 DAY 21 HR	7.8 MIN	
X	=	0.14880413E 08	XD	=	0.23522239E 05	ALT	=	0.20591725E 06	LAT	= -0.1685636E 02	VI	= 0.34548020E 05
Y	=	-0.13704312E 08	YD	=	0.22339756E 05	R	=	0.21125802E 08	LONG	= 0.18709157E 03	FPAI	= -0.22359504E 01
Z	=	-0.60880791E 07	ZD	=	0.11882982E 05	ROOT	=	-0.13478837E 04	FLP	= 0.	PSIV	= 0.69652231E 02
XL	=	0.17638891E 08	TAG	=	0.10000000E 01	GLOAD	=	0.44798772E 01	FLY	= 0.15592133E 05	VA	= 0.33169971E 05
YL	=	-0.10675651E 08	ROLL	=	0.	ACC	=	0.13182277E 03	RTGN	= 0.13569855E 03	FPAAA	= -0.23288921E 01
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.38980334E 05	RTGL	= 0.77592770E 03	PSAV	= 0.68769443E 02

19	10 APR.	1971	19	HR	27 MIN	39.59 SEC	TMST	940075.2344	J.D.	2441052.3108	10 DAY 21 HR	7.9 MIN	
16	X	=	0.14999955E 08	XD	=	0.23119022E 05	ALT	=	0.200002075E 06	LAT	= -0.16689080E 02	VI	= 0.33810285E 05
15	Y	=	-0.13591198E 08	YD	=	0.21783147E 05	R	=	0.21120018E 08	LONG	= 0.18753491E 03	FPAI	= -0.15318723E 01
13	Z	=	-0.60279244E 07	ZD	=	0.11581874E 05	ROOT	=	-0.90385133E 03	FLP	= 0.	PSIV	= 0.69538018E 02
10	XL	=	0.17642880E 08	TAG	=	0.20000000E 01	GLOAD	=	0.53158174E 01	FLY	= 0.18466341E 05	VA	= 0.32438001E 05
9	YL	=	-0.10669058E 08	ROLL	=	0.	ACC	=	0.15818379E 03	RTGN	= 0.13545002E 03	FPAAA	= -0.15969897E 01
7	ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.46165853E 05	RTGL	= 0.74851949E 03	PSAV	= 0.68628036E 02

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REFERENCE TRAJECTORY CALCULATION BEGAN AT 0.73624998E-02 SECONDS
VL IS NEGATIVE NO REFERENCE TRAJECTORY REQUIRED

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MOORE BUSINESS FORMS, INC.

FORM 1413 PRINTED IN U.S.A.

10 APR. 1971 19 HR 27 MIN 44.59 SEC TMST 940080.2344 J.D. 2441052.3109 10 DAY 21 HR 8.0 MIN
 X = 0.15114471E 08 XD = 0.22680692E 05 ALT = 0.19652350E 06 LAT = -0.16529380E 02 VI = 0.32990830E 05
 Y = -0.13483834E 08 YD = 0.21147588E 05 R = 0.21116627E 08 LONG = 0.18795660E 03 FPAI = -0.78698805E 00
 Z = -0.59708402E 07 RD = 0.11258802E 05 ROOT = -0.45313237E 03 FLP = 0.59990002E 04 PSIV = 0.69404135E 02
 XL = 0.17646769E 08 TAG = 0.30000000E 01 GLOAD = 0.57792218E 01 FLY = 0.1912338E 05 VA = 0.31612629E 05
 YL = -0.10662625E 08 ROLL = 0.17416666E 02 ACC = 0.17356182E 03 RTGN = 0.13486349E 03 FPAA = -0.82129950E 00
 ZL = -0.35758184E 07 RLDDOT = 0.16500000E 02 DRAG = 0.50105620E 05 RTGL = 0.72246460E 03 PSAV = 0.68462303E 02

10 APR. 1971 19 HR 27 MIN 49.59 SEC TMST 940085.2344 J.D. 2441052.3109 10 DAY 21 HR 8.0 MIN
 X = 0.15226482E 08 XD = 0.22071642E 05' ALT = 0.19494800E 06 LAT = -0.16371262E 02 VI = 0.32133350E 05
 Y = -0.13379795E 08 YD = 0.20492074E 05 R = 0.21115156E 08 LONG = 0.18036593E 03 FPAI = -0.36821379E-09
 Z = -0.59148229E 07 RD = 0.11201326E 05 ROOT = -0.20650493E 03 FLP = 0.20148149E 05 PSIV = 0.68822458E 02
 XL = 0.17650655E 08 TAG = 0.30000000E 01 GLOAD = 0.58158381E 01 FLY = -0.22775632E 03 VA = 0.30759740E 05
 YL = -0.10656190E 08 ROLL = 0.90647649E 02 ACC = 0.18659964E 03 RTGN = 0.12871050E 03 FPAA = -0.38465576E-00
 ZL = -0.35758184E 07 RLDDOT = 0. DRAG = 0.50373592E 05 RTGL = 0.698010579E 03 PSAV = 0.67827755E 02

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10 APR. 1971 19 HR 27 MIN 54.59 SEC TMST 940090.2344 J.D. 2441052.3110 10 DAY 21 HR 8.1 MIN
 X = 0.15335028E 08 XD = 0.21345616E 05 ALT = 0.19399375E 06 LAT = -0.16212521E 02 VI = 0.31281809E 05
 Y = -0.13278787E 08 YD = 0.19915012E 05 R = 0.21114305E 08 LONG = 0.18876173E 03 FPAI = -0.25665204E-00
 Z = -0.58587240E 07 RD = 0.11237290E 05 ROOT = -0.14012399E 03 FLP = 0.19710482E 05 PSIV = 0.68122690E 02
 XL = 0.17654539E 08 TAG = 0.30000000E 01 GLOAD = 0.57051855E 01 FLY = -0.14019518E 04 VA = 0.29914209E 05
 YL = -0.10649754E 08 ROLL = 0.94068438E 02 ACC = 0.18391299E 03 RTGN = 0.12127149E 03 FPAA = -0.26838374E-00
 ZL = -0.35758184E 07 RLDDOT = 0.36979370E 01 DRAG = 0.49400694E 05 RTGL = 0.67464925E 03 PSAV = 0.67066910E 02

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10 APR. 1971 19 HR 21 MIN 59.59 SEC TMSI 940095.2344 J.D. 2441052.3110 10 DAY 21 HR 8.2 MIN
X = -0.15439926E 08 XD = 0.20613123E 05 ALT = 0.19326375E 06 LAT = -0.16053247E 02 VI = 0.30450855E 05
Y = -0.13180576E 08 YD = 0.19375057E 05 R = 0.21113619E 08 LONG = 0.18914419E 03 EPAI = -0.22188979E-00
Z = -0.58024589E 07 ZD = 0.11267694E 05 RDDI = -0.11179272E 03 FLP = 0.18837146E 05 PSIV = 0.67434265E 02
XL = 0.17658421E 08 TAG = 0.30000000E 01 GLOAD = 0.55421661E 01 FLY = -0.36861803E 04 VA = 0.29089298E 05
YL = -0.10643316E 08 ROLL = 0.10107211E 03 ACC = 0.18025290E 03 RIGN = 0.11411966E 03 FPAA = -0.23227339E-00
ZL = -0.35758184E 07 RLDDI = 0. DRAG = 0.47986065E 05 RIGL = 0.65178770E 03 PSAV = 0.66315279E 02

10 APR. 1971 19 HR 28 MIN 4.59 SEC TMSI 940100.2344 J.D. 2441052.3111 10 DAY 21 HR 8.3 MIN
X = 0.15541160E 08 XD = 0.19881166E 05 ALT = 0.19254675E 06 LAT = -0.15893699E 02 VI = 0.29644388E 05
Y = -0.13084977E 08 YD = 0.18869687E 05 R = 0.21113064E 08 LONG = 0.18951373E 03 EPAI = -0.25689109E-00
Z = -0.57460608E 07 ZD = 0.11289985E 05 RDDI = -0.13291299E 03 FLP = 0.18049888E 05 PSIV = 0.66763765E 02
XL = 0.17662300E 08 TAG = 0.30000000E 01 GLOAD = 0.53173802E 01 FLY = -0.45945937E 04 VA = 0.28289133E 05
YL = -0.10636877E 08 ROLL = 0.10428133E 03 ACC = 0.175723657E 03 RIGN = 0.10732774E 03 FPAA = -0.26919654E-00
ZL = -0.35758184E 07 RLDDI = 0.35677894E 01 DRAG = 0.46263707E 05 RIGL = 0.62949461E 03 PSAV = 0.65579893E 02

10 APR. 1971 19 HR 28 MIN 9.59 SEC TMSI 940105.2344 J.D. 2441052.3112 10 DAY 21 HR 8.4 MIN
X = 0.15638739E 08 XD = 0.19152381E 05 ALT = 0.19167400E 06 LAT = -0.15734135E 02 VI = 0.28860042E 05
Y = -0.12991825E 08 YD = 0.18394147E 05 R = 0.21112293E 08 LONG = 0.18987077E 03 EPAI = -0.35360763E-00
Z = -0.56895756E 07 ZD = 0.11302375E 05 ROOT = -0.17811190E 03 FLP = 0.17314044E 05 PSIV = 0.66111780E 02
XL = 0.17666117E 08 TAG = 0.30000000E 01 GLOAD = 0.52496099E 01 FLY = -0.55753088E 04 VA = 0.27511048E 05
YL = -0.10630437E 08 ROLL = 0.10786912E 03 ACC = 0.117240145E 03 RIGN = 0.10088977E 03 EPAI = -0.37094586E-00
ZL = -0.35758184E 07 RLDDI = 0. DRAG = 0.45473908E 05 RIGL = 0.60775557E 03 PSAV = 0.64861289E 02

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MOORE BUSINESS FORMS, INC.

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10 APR.	1971	19	HR	28 MIN	14.59 SEC	TNST	940110.2344	J.D.	2441052.3112	10 DAY 21 HR	8.5 MIN			
X	=	0.15732705E 08	XD	=	0.18435728E 05	ALT	=	0.19055255E 06	LAT	=	-0.15574770E 02	VI	=	0.28089582E 05
Y	=	-0.12901025E 08	YD	=	0.17926582E 05	R	=	0.21111270E 08	LONG	=	0.19021566E 03	FPAI	=	-0.47393060E-00
Z	=	-0.56330546E 07	ZD	=	0.11304255E 05	RDOT	=	-0.23234452E 03	FLP	=	0.17090656E 05	PSIV	=	0.65461022E 02
XL	=	0.17670052E 08	TAG	=	0.30000000E 01	GLOAD	=	0.51802084E 01	FLY	=	-0.55033755E 04	VA	=	0.26747079E 03
YL	=	-0.10623995E 08	ROLL	=	0.10764912E 03	ACC	=	0.17019874E 03	RIGN	=	0.94621000E 02	FPAIA	=	-0.49771729E-00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.44667198E 05	RTGL	=	0.58658823E 03	PSAV	=	0.64141767E 02

10 APR.	1971	19	HR	28 MIN	19.59 SEC	TNST	940115.2344	J.D.	2441052.3113	10 DAY 21 HR	8.5 MIN			
X	=	0.15823110E 08	XD	=	0.17727162E 05	ALT	=	0.18913775E 06	LAT	=	-0.15415772E 02	VI	=	0.27326197E 03
Y	=	-0.12812556E 08	YD	=	0.17460899E 05	R	=	0.21109957E 08	LONG	=	0.19054860E 03	FPAI	=	-0.61675203E 00
Z	=	-0.55765509E 07	ZD	=	0.11295386E 05	RDOT	=	-0.29414497E 03	FLP	=	0.16997765E 05	PSIV	=	0.64807894E 02
XL	=	0.17673925E 08	TAG	=	0.30000000E 01	GLOAD	=	0.51506177E 01	FLY	=	-0.50734637E 00	VA	=	0.25009497E 03
YL	=	-0.10617551E 08	ROLL	=	0.10764912E 03	ACC	=	0.16922155E 03	RIGN	=	0.884588630E 02	FPAIA	=	-0.601442210E 00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.44663228E 05	RTGL	=	0.56599397E 03	PSAV	=	0.63014510E 02

10 APR.	1971	19	HR	28 MIN	24.59 SEC	TNST	940120.2344	J.D.	2441052.3113	10 DAY 21 HR	8.6 MIN			
X	=	0.15909986E 08	XD	=	0.17025992E 05	ALT	=	0.16740275E 06	LAT	=	-0.15257319E 02	VI	=	0.26563931E 03
Y	=	-0.12726422E 08	YD	=	0.16989033E 05	R	=	0.21108321E 08	LONG	=	0.19086971E 03	FPAI	=	-0.77349985 00
Z	=	-0.55201195E 07	ZD	=	0.11275230E 05	RDOT	=	-0.35848950E 03	FLP	=	0.17348720E 05	PSIV	=	0.64141920E 02
XL	=	0.17677795E 08	TAG	=	0.30000000E 01	GLOAD	=	0.51703701E 01	FLY	=	-0.454866596E 04	VA	=	0.25239493E 03
YL	=	-0.10611107E 08	ROLL	=	0.10669168E 03	ACC	=	0.16917975E 03	RIGN	=	0.82326305E 02	FPAIA	=	-0.91397791E 00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.44837791E 05	RTGL	=	0.54597961E 03	PSAV	=	0.62678432E 02

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10 APR. 1971 19 HR 28 MIN 29.59 SEC TMSI 940125.2344 J.D. 2441052.3114 10 DAY 21 HR 8.7 MIN

X = 0.15993396E 08 XD = 0.16341291E 05 ALT = 0.18538775E 06 LAT = -0.15092536E 02 Y1 = 0.25793455E 05

Y = -0.12662713E 08 YD = 0.16689127E 05 R = 0.21106403E 08 LONG = 0.19117896E 03 FPA1 = -0.89847979E 00

Z = -0.54638210E 07 ZD = 0.11241585E 05 RDOT = -0.40446170E 03 FLP = 0.18040854E 05 PSIV = 0.63444511E 02

X1 = 0.17681662E 08 TAG = 0.30000000E 01 GLOAD = 0.52402974E 01 FLY = -0.22533264E 04 YA = 0.24612853E 05

Y1 = -0.10606661E 08 ROLL = 0.97119449E 02 ACC = 0.16992504E 03 RIGN = 0.76048464E 02 FPAA = -0.9696645E 00

Z1 = -0.35758184E 07 RLDOT = 0. DRAG = 0.45452579E 05 RIGL = 0.52656970E 03 PSAV = 0.61888095E 02

10 APR. 1971 19 HR 28 MIN 34.59 SEC TMSI 940130.2344 J.D. 2441052.3114 10 DAY 21 HR 8.8 MIN

X = 0.16073432E 08 XD = 0.15675287E 05 ALT = 0.18320525E 06 LAT = -0.14942551E 02 VI = 0.25012203E 05

Y = -0.12561584E 08 YD = 0.15958015E 05 R = 0.21104316E 08 LONG = 0.19147623E 03 FPA1 = -0.97911529E 00

Z = -0.54077322E 07 ZD = 0.11190953E 05 RDOT = -0.42740736E 03 FLP = 0.18408244E 05 PSIV = 0.62715406E 02

X1 = 0.17685528E 08 TAG = 0.30000000E 01 GLOAD = 0.53180308E 01 FLY = -0.13396034E 04 YA = 0.23700154E 05

Y1 = -0.10598213E 08 ROLL = 0.94162187E 02 ACC = 0.171165079E 03 RIGN = 0.69639461E 02 FPAA = -0.10333239E 01

Z1 = -0.35758184E 07 RLDOT = -0.35548214E 01 DRAG = 0.46142307E 05 RIGL = 0.50776282E 03 PSAV = 0.61066353E 02

EQUILIBRIUM GLIDE PHASE BEGAN AT 0.12962500E 03SECONDS WITH VELOCITY = 0.24377465E 05 AND RDOT = -0.42914217E 03

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DRAC = 0-446806181 E 05 RIGL = 0-48955492 E 03 F3AV = 0-00000000 E 00

21 = -0.35758184E 07 RLDUI = V.

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MOORE BUSINESS FORMS, INC.

FORM 1413 SEPTEMBER 1942

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10 APR. 1971 19 HR 28 MIN 44.72 SEC IMSI 940140.3594 J.D. 2441052.3116 10 DAY 21 HR 9.0 MIN
X = 0.16225521E 08 XD = 0.14378114E 05 ALT = 0.1787475E 06 LAT = -0.14627887E 02 V1 = 0.23393895E 05
Y = -0.12405804E 08 YD = 0.14798663E 05 R = 0.21100014E 08 LONG = 0.19204098E 03 FPAI = -0.10069901E 01
Z = -0.52951921E 07 ZD = 0.11024688E 05 RDOT = -0.41113340E 03 FLP = 0.18792195E 05 PSIV = 0.61160239E 02
XL = 0.17693348E 08 IAG = 0.60000000E 01 GLOAD = 0.544662926E 01 FLY = 0.20517762E 04 YA = 0.22101116E 05
YL = -0.10585152E 08 ROLL = -0.83768991E 02 ACC = 0.17359113E 03 RIGN = 0.566480169E 02 FPAA = -0.10658988E 01
ZL = -0.35758184E 07 RLDOT = -0.30107917E 01 DRAG = 0.47259681E 05 RIGL = 0.47150650E 03 PSAV = 0.59297106E 02

10 APR. 1971 19 HR 28 MIN 49.72 SEC IMSI 940145.3594 J.D. 2441052.3116 10 DAY 21 HR 9.0 MIN
X = 0.16295875E 08 XD = 0.13767313E 05 ALT = 0.17665150E 06 LAT = -0.14474576E 02 V1 = 0.22584641E 05
Y = -0.12333310E 08 YD = 0.14196937E 05 R = 0.21098051E 08 LONG = 0.19230134E 03 FPAI = -0.95048741E 00
Z = -0.52403514E 07 ZD = 0.10907524E 05 RDOT = -0.37665246E 03 FLP = 0.18471325E 05 PSIV = 0.60369735E 02
XL = 0.17697206E 08 IAG = 0.60000000E 01 GLOAD = 0.54465653E 01 FLY = 0.40106593E 04 YA = 0.21302173E 05
YL = -0.10578701E 08 ROLL = -0.77749580E 02 ACC = 0.17244382E 03 RIGN = 0.50048092E 02 FPAA = -0.10077159E 01
ZL = -0.35758184E 07 RLDOT = 0 DRAG = 0.47259681E 05 RIGL = 0.45448988E 03 PSAV = 0.58387294E 02

10 APR. 1971 19 HR 28 MIN 54.72 SEC IMSI 940150.3594 J.D. 2441052.3117 10 DAY 21 HR 9.1 MIN
X = 0.16363229E 08 XD = 0.13179742E 05 ALT = 0.17480650E 06 LAT = -0.14322996E 02 V1 = 0.21779184E 05
Y = -0.12263841E 08 YD = 0.13589527E 05 R = 0.21096285E 08 LONG = 0.19254955E 03 FPAI = -0.85322381E 00
Z = -0.51861515E 07 ZD = 0.10768103E 05 RDOT = -0.32431614E 03 FLP = 0.17979832E 05 PSIV = 0.59570698E 02
XL = 0.17701062E 08 IAG = 0.60000000E 01 GLOAD = 0.53978165E 01 FLY = 0.52552794E 04 YA = 0.20507378E 05
YL = -0.10572248E 08 ROLL = 0.73707020E 02 ACC = 0.17019807E 03 RIGN = 0.43777737E 02 FPAA = -0.9061455E 00
ZL = -0.35758184E 07 RLDOT = -0.30018485E 01 DRAG = 0.46830302E 05 RIGL = 0.43804667E 03 PSAV = 0.57468403E 02

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10 APR. 1971 19 HR 28 MIN 59.72 SEC TMST 940155.3594 J.D. 2441052.31117 10 DAY 21 HR 9.2 MIN
X = 0.16427723E 08 XD = 0.12622017E 05 ALT = 0.17326050E 06 LAT = -0.14173420E 02 VI = 0.20984910E 05
Y = -0.12197413E 08 YD = 0.12983563E 05 R = 0.21094826E 06 LONG = 0.19270502E 03 FPAI = -0.70546547E 00
Z = -0.51327098E 07 ZD = 0.10605576E 05 RDOT = -0.25837428E 03 FLP = 0.16794320E 05 PSIV = 0.58801785E 02
XL = 0.17704916E 08 TAG = 0.60000000E 01 GLOAD = 0.52786667E 01 FLY = 0.73035209E 04 VA = 0.19723908E 05
YL = -0.10565793E 08 ROLL = 0.66496721E 02 ACC = 0.16528321E 03 RTGN = 0.37775446E 02 FPAA = -0.75056940E 00
ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.45784182E 05 RTGL = 0.42216240E 03 PSAV = 0.56555910E 02

10 APR. 1971 19 HR 29 MIN 4.72 SEC TMST 940160.3594 J.D. 2441052.31118 10 DAY 21 HR 9.3 MIN
X = 0.16489514E 08 XD = 0.12100173E 05 ALT = 0.17207875E 06 LAT = -0.14026110E 02 VI = 0.20213897E 05
Y = -0.12132983E 08 YD = 0.12392166E 05 R = 0.21093728E 06 LONG = 0.19301055E 03 FPAI = -0.50882262E 00
Z = -0.50801337E 07 ZD = 0.10422173E 05 RDOT = -0.17950978E 03 FLP = 0.15793512E 05 PSIV = 0.58058834E 02
XL = 0.17708766E 08 TAG = 0.60000000E 01 GLOAD = 0.50816417E 01 FLY = 0.76238052E 04 VA = 0.18963539E 05
YL = -0.10559337E 08 ROLL = 0.63647147E 02 ACC = 0.15864550E 03 RTGN = 0.32173561E 02 FPAA = -0.54237080E 00
ZL = -0.35758184E 07 RLDT = -0.30139106E 01 DRAG = 0.44063084E 05 RTGL = 0.40681731E 03 PSAV = 0.55671709E 02

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10 APR. 1971 19 HR 29 MIN 9.72 SEC TMST 940165.3594 J.D. 2441052.31118 10 DAY 21 HR 9.4 MIN
X = 0.16548787E 08 XD = 0.11615286E 05 ALT = 0.17131175E 06 LAT = -0.13661297E 02 VI = 0.19474873E 05
Y = -0.12073449E 08 YD = 0.11826296E 05 R = 0.21093044E 06 LONG = 0.19322429E 03 FPAI = -0.27452493E-00
Z = -0.50285163E 07 ZD = 0.10222257E 05 RDOT = -0.93310846E 02 FLP = 0.14184625E 05 PSIV = 0.57363459E 02
XL = 0.17712615E 08 TAG = 0.60000000E 01 GLOAD = 0.48444077E 01 FLY = 0.90003671E 04 VA = 0.18234766E 05
YL = -0.10552879E 08 ROLL = 0.57604232E 02 ACC = 0.15031788E 03 RTGN = 0.27046277E 02 FPAA = -0.29319355E-00
ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.41997783E 05 RTGL = 0.39199341E 03 PSAV = 0.54831286E 02
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10 APR. 1971 19 HR 29 MIN 14.72 SEC JMSI 940170.3594 J.D. 2441052.3119 10 DAY 21 HR 9.5 MIN

X = 0.16605721E 08 XD = 0.11167279E 05 ALT = 0.17098425E 06 LAT = -0.13739166E 02 V1 = 0.18775426E 05

Y = -0.12015662E 08 YD = 0.11295243E 05 R = 0.21092796E 08 LONG = 0.19342770E 03 EPAJ = -0.16589676E-01

Z = -0.49779283E 07 ZD = 0.10011293E 05 RDOT = -0.54363207E 01 FLP = 0.12308229E 05 PSIV = 0.56726103E 02

X1 = 0.17716462E 08 JAG = 0.60000000E 01 GLOAD = 0.454449067E 01 FLY = 0.98344789E 04 VA = 0.175444976E 05

Y1 = -0.105464421E 08 ROL1 = 0.51374567E 02 ACC = 0.14018580E 03 RIGN = 0.22437792E 02 FPAA = -0.17751661E-01

Z1 = -0.35758184E 07 RLDOT = 0. DRAG = 0.39386665E 05 RIGL = 0.37767134E 03 PSAV = 0.56047178E 02

10 APR. 1971 19 HR 29 MIN 19.72 SEC JMSI 940175.3594 J.D. 2441052.3120 10 DAY 21 HR 9.5 MIN

X = 0.16660525E 08 XD = 0.10758126E 05 ALT = 0.17109700E 06 LAT = -0.13599843E 02 V1 = 0.18123831E 05

Y = -0.11960424E 08 YD = 0.108072841E 05 R = 0.21092987E 08 LONG = 0.19362158E 03 EPAJ = 0.25473532E-00

Z = -0.49284141E 07 ZD = 0.97962092E 04 RDOT = 0.80577741E 02 FLP = 0.108935889E 05 PSIV = 0.26160867E 02

X1 = 0.17720306E 08 JAG = 0.60000000E 01 GLOAD = 0.42008616E 01 FLY = 0.96553982E 04 VA = 0.16902163E 05

Y1 = -0.10539960E 08 ROL1 = 0.484448219E 02 ACC = 0.12918450E 03 RIGN = 0.18410097E 02 FPAA = 0.27316865E-00

Z1 = -0.35758184E 07 RLDOT = -0.30398885E 01 DRAG = 0.36391706E 05 RIGL = 0.36382582E 03 PSAV = 0.53336568E 02

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10 APR.	1971	19	HR	29	MIN	29.72	SEC	TMST	940105.3594	J.D.	2441052.3121	10	DAY	21	HR	9.7	MIN		
X	=	0.16764407E	08	XD	=	0.10048948E	05	ALT	=	0.17253100E	06	LAT	=	-0.13329791E	02	VI	=	0.16981610E	05
Y	=	-0.11856637E	08	YD	=	0.99840266E	04	R	=	0.21094570E	08	LONG	=	0.19398416E	03	FPAI	=	0.77221520E	00
Z	=	-0.48326341E	07	ZD	=	0.93655190E	04	RDOT	=	0.22886608E	03	FLP	=	0.74663075E	04	PSIV	=	0.55263597E	02
XL	=	0.17727987E	08	TAG	=	0.60000000E	01	GLOAD	=	0.34680772E	01	FLY	=	0.94101052E	04	VA	=	0.15774341E	05
YL	=	-0.10527036E	08	ROLL	=	0.38422243E	02	ACC	=	0.10558550E	03	RIGN	=	0.12062675E	02	FPA	=	0.83132025E	00
ZL	=	-0.35758184E	07	RDOT	=	0.	DRAG	=	0.30027693E	05	RTGL	=	0.33745419E	03	PSAV	=	0.52162622E	02	

10 APR.	1971	19	HR	29	MIN	34.72	SEC	TMST	940190.3590	J.D.	2441052.3121	10	DAY	21	HR	9.8	MIN		
X	=	0.16813911E	08	XD	=	0.97415865E	04	ALI	=	0.17375125E	06	LAT	=	-0.13198985E	02	VI	=	0.16490095E	05
Y	=	-0.11807578E	08	YD	=	0.96474542E	04	R	=	0.21095861E	08	LONG	=	0.19415462E	03	FPAI	=	0.99261089E	00
Z	=	-0.47863179E	07	ZD	=	0.91624969E	04	RDOT	=	0.28566552E	03	FLP	=	0.61324229E	04	PSIV	=	0.54925826E	02
XL	=	0.17731824E	08	TAG	=	0.60000000E	01	GLOAD	=	0.31237121E	01	FLY	=	0.89084207E	00	VA	=	0.15288399E	05
YL	=	-0.10520571E	08	ROLL	=	0.34542939E	02	ACC	=	0.94611288E	02	RIGN	=	0.96406546E	01	FPA	=	0.10706424E	01
ZL	=	-0.35758184E	07	RDOT	=	-0.37514144E	01	DRAG	=	0.27037771E	05	RTGL	=	0.32486760E	03	PSAV	=	0.51697077E	02

10 APR.	1971	19	HR	29	MIN	39.72	SEC	TMST	940195.3594	J.D.	2441052.3122	10	DAY	21	HR	9.9	MIN		
X	=	0.16861910E	08	XD	=	0.94618508E	04	ALI	=	0.17522775E	06	LAT	=	-0.13070881E	02	VI	=	0.16008720E	05
Y	=	-0.11760082E	08	YD	=	0.93585160E	04	R	=	0.21097406E	08	LONG	=	0.19431894E	03	FPAI	=	0.11784031E	01
Z	=	-0.47409936E	07	ZD	=	0.89695588E	04	RDOT	=	0.33005099E	03	FLP	=	0.44017101E	00	PSIV	=	0.50659768E	02
XL	=	0.17735659E	08	TAG	=	0.60000000E	01	GLOAD	=	0.27944613E	01	FLY	=	0.86125145E	04	VA	=	0.10851473E	05
YL	=	-0.10514105E	08	ROLL	=	0.27070805E	02	ACC	=	0.84311754E	02	RIGN	=	0.76662122E	01	FPA	=	0.12734170E	01
ZL	=	-0.35758184E	07	RDOT	=	0.	DRAG	=	0.24160372E	05	RTGL	=	0.31263797E	03	PSAV	=	0.51311740E	02	

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10 APR. 1971 19 HR 29 MIN 44.72 SEC TMSI 940200.3594 J.D. 2441052.3123 10 DAY 21 HR 10.0 MIN
 X = 0.16908570E 08 XD = 0.92056611E 04 ALT = 0.17689375E 06 LAT = -0.12945362E 02 V1 = 0.15654436E 05
 Y = -0.11713918E 08 YD = 0.91139775E 04 R = 0.21099139E 08 LONG = 0.19447787E 03 EPAL = 0.13209073E 01
 Z = -0.469666020E 07 ZD = 0.87893448E 04 RDOT = 0.36086825E 03 FLP = 0.34990716E 04 PSIV = 0.54456031E 02
 XI = 0.17739491E 08 TAG = 0.60000000E 01 GLOAD = 0.24957947E 01 FLY = 0.78972294E 04 YA = 0.14460620E 05
 YI = -0.10507638E 08 ROLL = 0.23896975E 02 ACC = 0.75284798E 02 RIGN = 0.60599235E 01 FPAA = 0.16299786E 01
 ZI = -0.35758184E 07 RLDOT = 0. DRAG = 0.21594232E 05 RIGL = 0.30073378E 03 PSAV = 0.50997923E 02

10 APR. 1971 19 HR 29 MIN 49.72 SEC TMSI 940205.3594 J.D. 2441052.3123 10 DAY 21 HR 10.0 MIN
 X = 0.16953997E 08 XD = 0.89684033E 04 ALT = 0.17868175E 06 LAT = -0.12822273E 02 V1 = 0.15301707E 05
 Y = -0.11668879E 08 YD = 0.89080028E 04 R = 0.21100992E 08 LONG = 0.19463206E 03 EPAL = 0.14161902E 01
 Z = -0.46530762E 07 ZD = 0.86230723E 04 RDOT = 0.37817656E 03 FLP = 0.27493887E 04 PSIV = 0.54301162E 02
 XI = 0.17743321E 08 TAG = 0.60000000E 01 GLOAD = 0.22297548E 01 FLY = 0.72084858E 04 YA = 0.14110497E 05
 YI = -0.10501170E 08 ROLL = 0.208777352E 02 ACC = 0.674440296E 02 RIGN = 0.47285709E 01 FPAA = 0.153577740E 01
 ZI = -0.35758184E 07 RLDOT = 0. DRAG = 0.19287530E 05 RIGL = 0.28912496E 03 PSAV = 0.50741516E 02

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 C

10 APR. 1971 19 HR 29 MIN 54.72 SEC TMSI 940210.3594 J.D. 2441052.3124 10 DAY 21 HR 10.1 MIN
 X = 0.16998279E 08 XD = 0.87467981E 04 ALT = 0.18052450E 06 LAT = -0.12701450E 02 V1 = 0.14986674E 03
 Y = -0.11624782E 08 YD = 0.87361406E 04 R = 0.21102898E 08 LONG = 0.19478209E 03 EPAL = 0.14614528E 01
 Z = -0.46103437E 07 ZD = 0.84719395E 04 RDOT = 0.38222792E 03 FLP = 0.20940335E 04 PSIV = 0.54103441E 02
 XI = 0.17747149E 08 TAG = 0.60000000E 01 GLOAD = 0.19920642E 01 FLY = 0.65666812E 04 YA = 0.13797416E 05
 YI = -0.10494700E 08 ROLL = 0.17686435E 02 ACC = 0.60581819E 02 RIGN = 0.35958571E 01 EPAA = 0.15874623E 01
 ZI = -0.35758184E 07 RLDOT = 0. DRAG = 0.17231581E 05 RIGL = 0.27778318E 03 PSAV = 0.50530353E 02 C
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10 APR.	1971	19	HR	29 MIN	59.72 SEC	TMST	940215.3594	J.D.	2441052.3124	10 DAY	21 HR	10.2 MIN							
X	=	0.17041495E	08	XD	=	0.85447048E	04	ALT	=	0.18236300E	06	LAT	=	-0.12582792E	02	VI	=	0.14705558E	05
Y	=	-0.11581454E	08	YD	=	0.86071705E	04	R	=	0.21104798E	08	LONG	=	0.19492849E	03	FPAI	=	0.14659481E	01
Z	=	-0.45683559E	07	ZD	=	0.83161342E	04	RDOT	=	0.37620980E	03	FLP	=	-0.15554824E	04	PSIV	=	0.54189495E	02
XL	=	0.17750974E	08	TAG	=	0.60000000E	01	GLOAD	=	0.17907529E	01	FLY	=	0.59966105E	04	VA	=	0.13516152E	05
YL	=	-0.10488228E	08	ROLL	=	-0.14541668E	02	ACC	=	0.54934933E	02	RIGN	=	0.30559325E	01	FPAAA	=	0.15949841E	01
ZL	=	-0.35758184E	07	RLDOT	=	0.	DRAG	=	0.154687669E	05	RTGL	=	0.266667692E	03	PSAV	=	0.50458765E	02	

10 APR.	1971	19	HR	30 MIN	4.72 SEC	TMST	940220.3594	J.D.	2441052.3125	10 DAY	21 HR	10.3 MIN							
X	=	0.17083747E	08	XD	=	0.83571686E	04	ALT	=	0.18414300E	06	LAT	=	-0.12466527E	02	VI	=	0.14454512E	05
Y	=	-0.11538646E	08	YD	=	0.85189270E	04	R	=	0.21106638E	08	LONG	=	0.19507200E	03	FPAI	=	0.14184237E	01
Z	=	-0.45271845E	07	ZD	=	0.81558690E	04	RDOT	=	0.35780170E	03	FLP	=	-0.14005748E	04	PSIV	=	0.54316752E	02
XL	=	0.17754797E	08	TAG	=	0.60000000E	01	GLOAD	=	0.16122846E	01	FLY	=	0.53994192E	04	VA	=	0.13262879E	05
YL	=	-0.10481755E	08	ROLL	=	-0.14541668E	02	ACC	=	0.50250946E	02	RIGN	=	0.30630084E	01	FPAAA	=	0.15458955E	01
ZL	=	-0.35758184E	07	RLDOT	=	0.	DRAG	=	0.13945281E	05	RTGL	=	0.25578299E	03	PSAV	=	0.50520475E	02	

19	10 APR.	1971	19	HR	30 MIN	9.72 SEC	TMST	940225.3594	J.D.	2441052.3125	10 DAY	21 HR	10.4 MIN							
16	X	=	0.17125078E	08	XD	=	0.81759894E	04	ALT	=	0.18580675E	06	LAT	=	-0.12352510E	02	VI	=	0.14227051E	05
14	Y	=	-0.11496239E	08	YD	=	0.84462531E	04	R	=	0.21108360E	08	LONG	=	0.19521299E	03	FPAI	=	0.13275923E	01
12	Z	=	-0.44867668E	07	ZD	=	0.80139243E	04	RDOT	=	0.32961352E	03	FLP	=	-0.12752615E	04	PSIV	=	0.54432836E	02
10	XL	=	0.17758617E	08	TAG	=	0.60000000E	01	GLOAD	=	0.14680991E	01	FLY	=	0.49163951E	04	VA	=	0.13033342E	05
8	YL	=	-0.10475281E	08	ROLL	=	-0.14541668E	02	ACC	=	0.46599688E	02	RIGN	=	0.29894802E	01	FPAAA	=	0.1491681E	01
6	ZL	=	-0.35758184E	07	RLDOT	=	0.	DRAG	=	0.12697757E	05	RTGL	=	0.24508698E	03	PSAV	=	0.50582771E	02	

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10 APR. 1971 19 HR 30 MIN 14.72 SEC TMSI 940230.3594 J.D. 2441052.3126 10 DAY 21 HR 10.5 MIN
~~X~~ = -0.17165516E 08 XD = 0.80001859E 04 ALT = 0.18731075E 06 LAT = -0.12240526E 02 VI = 0.14019481E 05
~~Y~~ = -0.11454162E 08 YD = 0.83865419E 04 R = 0.21109920E 08 LONG = 0.19535168E 03 EPA1 = 0.11987853E 01
~~Z~~ = -0.444670198E 07 ZD = 0.78872522E 04 RD01 = 0.29330469E 03 FLP = -0.11670191E 04 PSIV = 0.54539417E 02
~~X1~~ = 0.17762436E 08 TAG = 0.60000000E 01 GLOAD = 0.134234904E 01 FLY = 0.449920279E 04 VA = 0.12823830E 05
~~Y1~~ = -0.10468806E 08 ROLL = -0.14541668E 02 ACC = 0.43565239E 02 RIGN = 0.28475513E 01 FPAA = 0.13105758E 01
~~Z1~~ = -0.35758184E 07 RD01 = 0.11619807E 05 RIGL = 0.23457104E 03 PSAV = 0.50634852E 02

10 APR. 1971 19 HR 30 MIN 19.72 SEC TMSI 940235.3594 J.D. 2441052.3127 10 DAY 21 HR 10.5 MIN
~~X~~ = 0.17205087E 08 XD = 0.78290425E 04 ALT = 0.18861650E 06 LAT = -0.12130398E 02 VI = 0.13828933E 05
~~Y~~ = -0.11612355E 08 YD = 0.83377666E 04 R = 0.21111282E 08 LONG = 0.19548825E 03 EPA1 = 0.10365068E 01
~~Z~~ = -0.44018727E 07 ZD = 0.77723894E 04 RD01 = 0.25015807E 03 FLP = -0.10788218E 04 PSIV = 0.54637025E 02
~~X1~~ = 0.17762511E 08 TAG = 0.60000000E 01 GLOAD = 0.12416674E 01 FLY = 0.41590146E 04 VA = 0.12631467E 05
~~Y1~~ = -0.10462329E 08 ROLL = -0.14541668E 02 ACC = 0.41180487E 02 RIGN = 0.264467076E 01 FPAA = 0.11347021E 01
~~Z1~~ = -0.35758184E 07 RD01 = 0.10741642E 05 RIGL = 0.22421977E 03 PSAV = 0.50681664E 02

10 APR. 1971 19 HR 30 MIN 24.72 SEC TMSI 940240.3594 J.D. 2441052.3127 10 DAY 21 HR 10.6 MIN
~~X~~ = 0.17243813E 08 XD = 0.76617019E 04 ALT = 0.18969375E 06 LAT = -0.12021972E 02 VI = 0.13651978E 05
~~Y~~ = -0.11370170E 08 YD = 0.82974880E 04 R = 0.21112413E 08 LONG = 0.19562287E 03 EPA1 = 0.84615456E 08
~~Z~~ = -0.43692681E 07 ZD = 0.76698454E 04 RD01 = 0.20160758E 03 FLP = -0.10087884E 04 PSIV = 0.54729965E 02
~~X1~~ = 0.17770065E 08 TAG = 0.60000000E 01 GLOAD = 0.11609238E 01 FLY = 0.38890257E 04 VA = 0.12452804E 05
~~Y1~~ = -0.10455850E 08 ROLL = -0.14541668E 02 ACC = 0.39252937E 02 RIGN = 0.232978705E 01 FPAA = 0.92764955E 00
~~Z1~~ = -0.35758184E 07 RD01 = 0.10044232E 05 RIGL = 0.21492046E 03 PSAV = 0.50724507E 02 C
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10 APR.	1971	19	HR	30 MIN	29.72 SEC	TNST	940245.3594	J.D.	2441052.3126	10 DAY 21 HR 10.7 MIN	
X	=	0.17281710E 08	XD	=	0.74975537E 04	ALT	=	0.19051900E 06	LAT	= -0.11915134E 02	VI = 0.13686204E 05
Y	=	-0.11329369E 08	YD	=	0.82639875E 04	R	=	0.21113291E 08	LONG	= 0.19575565E 03	FPAI = 0.63163625E 00
Z	=	-0.43311606E 07	ZD	=	0.75743506E 04	RDDT	=	0.14867069E 03	FLP	= -0.95222749E 03	PSIV = 0.54817105E 02
XL	=	0.17773876E 08	TAG	=	0.60000000E 01	GLOAD	=	0.10926601E 01	FLY	= 0.36709752E 04	VA = 0.12285420E 05
YL	=	-0.10449370E 08	ROLL	=	-0.14541668E 02	ACC	=	0.37917020E 02	RIGN	= 0.21088339E 01	FPAA = 0.69337775E 00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.94811643E 04	RIGL	= 0.20396293E 03	PSAV = 0.50764305E 02

10 APR.	1971	19	HR	30 MIN	34.72 SEC	TNST	940250.3594	J.D.	2441052.3126	10 DAY 21 HR 10.8 MIN	
X	=	0.17318793E 08	XD	=	0.73360681E 04	ALT	=	0.19107100E 06	LAT	= -0.11809785E 02	VI = 0.13329467E 05
Y	=	-0.11288121E 08	YD	=	0.82357277E 04	R	=	0.21113894E 08	LONG	= 0.19588672E 03	FPAI = 0.39651302E-09
Z	=	-0.42935139E 07	ZD	=	0.74852905E 04	RDDT	=	0.92285460E 02	FLP	= -0.90854459E 03	PSIV = 0.54900763E 02
XL	=	0.17777685E 08	TAG	=	0.60000000E 01	GLOAD	=	0.10451645E 01	FLY	= 0.35025712E 04	VA = 0.12127160E 05
YL	=	-0.10442889E 08	ROLL	=	-0.14541668E 02	ACC	=	0.36621802E 02	RIGN	= 0.17861610E 01	FPAA = 0.43582754E-00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.90462212E 04	RIGL	= 0.19403866E 03	PSAV = 0.50601915E 02

10 APR.	1971	19	HR	30 MIN	39.72 SEC	TNST	940255.3594	J.D.	2441052.3129	10 DAY 21 HR 10.9 MIN	
X	=	0.17355074E 08	XD	=	0.71767600E 04	ALT	=	0.19133475E 06	LAT	= -0.11705849E 02	VI = 0.13179722E 03
Y	=	-0.11247005E 08	YD	=	0.82112341E 04	R	=	0.21114208E 08	LONG	= 0.19601614E 03	FPAI = 0.14423396E-00
Z	=	-0.42562998E 07	ZD	=	0.74009976E 04	RDDT	=	0.33178071E 02	FLP	= -0.87793530E 03	PSIV = 0.54901997E 02
XL	=	0.17781491E 08	TAG	=	0.60000000E 01	GLOAD	=	0.10086405E 01	FLY	= 0.33810983E 04	VA = 0.11975971E 05
YL	=	-0.10436407E 08	ROLL	=	-0.14541668E 02	ACC	=	0.36019763E 02	RIGN	= 0.14360047E 01	FPAA = 0.15873274E-00
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.87324886E 04	RIGL	= 0.18424127E 03	PSAV = 0.50638203E 02

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10 APR.	1971	19	HR	30 MIN	44.72 SEC	TMSI	940260.3594	J.D.	2441052.3129	10 DAY 21 HR 11.0 MIN	
X	=	0.17390563E 08	XD	=	-0.70192147E 04	ALT	=	0.19130000E 06	LAT	= -0.11603271E 02	V1 = 0.13035040E 05
Y	=	-0.11206005E 08	YD	=	0.81891033E 04	R	=	0.21116223E 08	LONG	= 0.19616400E 03	FPA1 = -0.12190948E-00
Z	=	-0.42194985E 07	ZD	=	0.73199381E 04	RDOT	=	-0.27734941E 02	FLP	= -0.856922947E 03	PSIV = 0.55062204E 02
X1	=	0.17785295E 08	TAG	=	0.60000000E 01	GLOAD	=	0.98522241E 00	FLY	= 0.33035874E 04	VA = 0.11829910E 05
Y1	=	-0.10429923E 08	ROLL	=	-0.14541668E 02	ACC	=	0.35469577E 02	RIGN	= 0.10636977E 01	FPA2 = -0.13432506E-00
Z1	=	-0.35758184E 07	RDOT1	=	0.	DRAG	=	0.85322985E 04	RIGL	= 0.17456575E 03	PSAV = 0.50874028E 02

10 APR.	1971	19	HR	30 MIN	49.84 SEC	TMSI	940265.4844	J.D.	2441052.3130	10 DAY 21 HR 11.0 MIN	
X	=	0.17426126E 08	XD	=	0.68591612E 04	ALT	=	0.19094600E 06	LAT	= -0.11499500E 02	V1 = 0.12890103E 05
Y	=	-0.11166091E 08	YD	=	0.81674835E 04	R	=	0.21113918E 08	LONG	= 0.19627345E 03	FPA1 = -0.40582166E-00
Z	=	-0.41821924E 07	ZD	=	0.72387064E 04	RDOT	=	-0.91298856E 02	FLP	= -0.84735883E 03	PSIV = 0.55144712E 02
X1	=	0.17789192E 08	TAG	=	0.60000000E 01	GLOAD	=	0.97389495E 00	FLY	= 0.32666912E 04	VA = 0.11683613E 05
Y1	=	-0.10423275E 08	ROLL	=	-0.14541668E 02	ACC	=	0.35132505E 02	RIGN	= 0.66396580E 00	FPA2 = -0.491772658E-00
Z1	=	-0.35758184E 07	RDOT1	=	0.	DRAG	=	0.84370051E 04	RIGL	= 0.16477128E 03	PSAV = 0.50911154E 02

19	10 APR.	1971	19	HR	30 MIN	54.84 SEC	TMSI	940270.4844	J.D.	2441052.3131	10 DAY 21 HR 11.1 MIN	
17	X	=	0.17460034E 08	XD	=	0.67040143E 04	ALT	=	0.19028575E 06	LAT	= -0.11399582E 02	V1 = 0.12750427E 05
15	Y	=	-0.11123305E 08	YD	=	0.816748053E 04	R	=	0.21113305E 08	LONG	= 0.19639824E 03	FPA1 = -0.69353228E 00
13	Z	=	-0.41461977E 07	ZD	=	0.71584105E 04	RDOT	=	-0.15433277E 03	FLP	= -0.10929741E 04	PSIV = 0.55236392E 02
11	X1	=	0.17792991E 08	TAG	=	0.60000000E 01	GLOAD	=	0.97424459E 00	FLY	= 0.31953337E 04	VA = 0.11542492E 05
9	Y1	=	-0.10416749E 08	ROLL	=	-0.18883417E 02	ACC	=	0.35222214E 02	RIGN	= 0.28683017E-00	FPA2 = -0.76611328E 00
7	Z1	=	-0.35758184E 07	RDOT1	=	-0.42183689E 01	DRAG	=	0.84427300E 04	RIGL	= 0.15533384E 03	PSAV = 0.50959226E 02

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10 APR. 1971 19 HR 30 MIN 59.84 SEC TMST 940275.4844 J.D. 2441052.3131 10 DAY 21 HR 11.2 MIN

X = 0.1749316E 08 XD = 0.65490046E 04 ALT = 0.18930550E 06 LAT = -0.11301020E 02 VI = 0.12611249E 05

Y = -0.11082606E 08 YD = 0.81320710E 04 R = 0.21112371E 08 LONG = 0.19652157E 03 FPAI = -0.99749021E 00

Z = -0.41106176E 07 LD = 0.70727331E 04 RDOT = -0.21954429E 03 FLP = -0.15378860E 04 PSIV = 0.55361259E 02

XL = 0.17796788E 08 TAG = 0.60000000E 01 GLOAD = 0.98505216E 00 FLY = 0.30499411E 04 VA = 0.11401394E 05

YL = -0.10410301E 08 ROLL = -0.26758824E 02 ACC = 0.35810745E 02 RTGN = -0.21759784E-01 FPAA = -0.11033487E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.85393335E 04 RTCL = 0.14601241E 03 PSAV = 0.51042994E 02

10 APR. 1971 19 HR 31 MIN 4.84 SEC TMST 940280.4844 J.D. 2441052.3132 10 DAY 21 HR 11.3 MIN

X = 0.17525523E 08 XD = 0.63935010E 04 ALT = 0.18799625E 06 LAT = -0.11203888E 02 VI = 0.12471039E 05

Y = -0.11041981E 08 YD = 0.81182220E 04 R = 0.21111107E 08 LONG = 0.19664350E 03 FPAI = -0.13158223E 01

Z = -0.40754789E 07 LD = 0.69817222E 04 RDOT = -0.286637762E 03 FLP = -0.19103453E 04 PSIV = 0.55514405E 02

XL = 0.17800582E 08 TAG = 0.60000000E 01 GLOAD = 0.10055793E 01 FLY = 0.29132740E 04 VA = 0.11258088E 05

YL = -0.10403811E 08 ROLL = -0.33364277E 02 ACC = 0.36581371E 02 RTGN = -0.28372322E-00 FPAA = -0.14573137E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.87203837E 04 RTCL = 0.13680810E 03 PSAV = 0.51156580E 02

10 APR. 1971 19 HR 31 MIN 9.84 SEC TMST 940285.4844 J.D. 2441052.3132 10 DAY 21 HR 11.4 MIN

X = 0.17557100E 08 XD = 0.62369250E 04 ALT = 0.18635100E 06 LAT = -0.11108265E 02 VI = 0.12322707E 05

Y = -0.11001424E 08 YD = 0.81045153E 04 R = 0.21109506E 08 LONG = 0.19676405E 03 FPAI = -0.16466871E 01

Z = -0.40408107E 07 LD = 0.68843304E 04 RDOT = -0.35421260E 03 FLP = -0.21728268E 04 PSIV = 0.55695804E 02

XL = 0.17804374E 08 TAG = 0.60000000E 01 GLOAD = 0.10429069E 01 FLY = 0.28947900E 04 VA = 0.11113054E 05

YL = -0.10397320E 08 ROLL = -0.36891860E 02 ACC = 0.37523577E 02 RTGN = -0.50702539E 00 FPAA = -0.18269275E 01

ZL = -0.35758184E 07 RLDT = 0. DRAG = 0.90488210E 04 RTCL = 0.12772291E 03 PSAV = 0.51299150E 02

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10 APR. 1971 19 HR 31 MIN 14.84 SEC. TMSI 940290.4844 J.D. 2441052.3133 10 DAY 21 HR 11.5 MIN
 X = 0.17587890E 08 XD = 0.60787247E 04 ALT = 0.18436650E 06 LAT = -0.11016264E 02 VI = 0.12179000E 05
 Y = -0.10960939E 08 YD = 0.80895267E 04 R = 0.21107565E 08 LONG = 0.19688321E 03 EPAL = -0.19881400E 01
 Z = -0.400865482E 07 ZD = 0.67792588E 04 RDOT = -0.42255231E 03 FLP = -0.24523280E 04 PSIV = 0.55907430E 02
 XI = 0.17808164E 08 TAG = 0.60000000E 01 GLOAD = 0.10891973E 01 FLY = 0.28783298E 04 VA = 0.10962028E 05
 YI = -0.10390828E 08 ROLI = -0.40430796E 02 ACC = 0.38666863E 02 RIGN = -0.695318372E 00 EPAA = -0.22091205E 01
 ZI = -0.35758184E 07 RLDTI = 0. DRAG = 0.94534230E 04 RIGL = 0.11676094E 03 PSAV = 0.51472248E 02

10 APR. 1971 19 HR 31 MIN 19.84 SEC. TMSI 940295.4844 J.D. 2441052.3134 10 DAY 21 HR 11.5 MIN
 X = 0.17617884E 08 XD = 0.59183715E 04 ALT = 0.18206050E 06 LAT = -0.10921936E 02 VI = 0.12025335E 05
 Y = -0.10920536E 08 YD = 0.80720195E 04 R = 0.21105280E 08 LONG = 0.19700096E 03 EPAL = -0.23400134E 01
 Z = -0.39730328E 07 ZD = 0.666651380E 04 RDOT = -0.49098944E 03 FLP = -0.27118846E 04 PSIV = 0.56152371E 02
 XI = 0.17811951E 08 TAG = 0.60000000E 01 GLOAD = 0.11530500E 01 FLY = 0.26912401E 04 VA = 0.10904017E 05
 YI = -0.10384334E 08 ROLI = -0.43792617E 02 ACC = 0.40217504E 02 RIGN = -0.85095817E 00 EPAA = -0.26047056E 01
 ZI = -0.35758184E 07 RLDTI = -0.32057117E 01 DRAG = 0.10013308E 05 RIGL = 0.10992725E 03 PSAV = 0.51670515E 02

19 10 APR. 1971 19 HR 31 MIN 24.84 SEC. TMSI 940300.4844 J.D. 2441052.3134 10 DAY 21 HR 11.6 MIN
 X = 0.17647069E 08 XD = 0.57550120E 04 ALT = 0.17937375E 06 LAT = -0.10831477E 02 VI = 0.11862051E 05
 Y = -0.10880224E 08 YD = 0.80508970E 04 R = 0.21102654E 08 LONG = 0.197111725E 03 EPAL = -0.27028399E 01
 Z = -0.39400154E 07 ZD = 0.65399651E 04 RDOT = -0.55936640E 03 FLP = -0.32097792E 04 PSIV = 0.56436705E 02
 XI = 0.17815736E 08 TAG = 0.60000000E 01 GLOAD = 0.12290635E 01 FLY = 0.27252756E 04 VA = 0.10636783E 05
 YI = -0.10377039E 08 ROLI = -0.50361416E 02 ACC = 0.42524552E 02 RIGN = -0.91038807E 00 EPAA = -0.30144933E 01
 ZI = -0.35758184E 07 RLDTI = 0. DRAG = 0.10679939E 05 RIGL = 0.10122899E 03 PSAV = 0.51923020E 02
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10 APR.	1971	19	HR	31 MIN	29.84 SEC	TNST	940305-4844	J.D.	2441052-3135	10 DAY 21 HR 11.7 MIN		
X	=	0.17675428E 08	XD	=	0.55879021E 04	ALT	=	0.17636750E 06	LAT	= -0.10743022E 02	VI	= 0.11687635E 05
Y	=	-0.10840033E 08	YD	=	0.80245870E 04	R	=	0.21099688E 08	LONG	= 0.19723202E 03	FPAJ	= -0.30762523E 01
Z	=	-0.39076554E 07	ZD	=	0.64017312E 04	RDOT	=	-0.62721620E 03	FLP	= -0.36788899E 04	PSIV	= 0.56766413E 02
XL	=	0.17819519E 08	TAG	=	0.60000000E 01	GLOAD	=	0.13231474E 01	FLY	= 0.27614534E 04	VA	= 0.10457860E 05
YL	=	-0.10371343E 08	ROLL	=	-0.53107322E 02	ACC	=	0.44946156E 02	RTGN	= -0.10561090E 01	FPAF	= -0.34384094E 01
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.11499961E 05	RTGL	= 0.92615062E 02	PSAV	= 0.52213458E 02

10 APR.	1971	19	HR	31 MIN	34.84 SEC	TNST	940310-4844	J.D.	2441052-3135	10 DAY 21 HR 11.8 MIN		
X	=	0.17702942E 08	XD	=	0.54166890E 04	ALT	=	0.17302775E 06	LAT	= -0.10656761E 02	VI	= 0.11499692E 05
Y	=	-0.10799991E 08	YD	=	0.79910253E 04	R	=	0.21096386E 08	LONG	= 0.19734519E 03	FPAJ	= -0.24577055E 01
Z	=	-0.38760222E 07	ZD	=	0.62486724E 04	RDOT	=	-0.69356622E 03	FLP	= -0.41836036E 04	PSIV	= 0.57145800E 02
XL	=	0.17823299E 08	TAG	=	0.60000000E 01	GLOAD	=	0.14375411E 01	FLG	= 0.27386827E 04	VA	= 0.19264808E 05
YL	=	-0.10364845E 08	ROLL	=	-0.56790322E 02	ACC	=	0.48069910E 02	RTGN	= -0.11110757E 01	FPAF	= -0.38762762E 01
ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.12500731E 05	RTCL	= 0.84276147E 02	PSAV	= 0.52551368E 02

19	10 APR.	1971	19	HR	31 MIN	39.84 SEC	TNST	940315-4844	J.D.	2441052-3136	10 DAY 21 HR 11.9 MIN		
16	X	=	0.17729586E 08	XD	=	0.52398666E 04	ALT	=	0.16936000E 06	LAT	= -0.10572911E 02	VI	= 0.11294976E 05
14	Y	=	-0.10760138E 08	YD	=	0.79487692E 04	R	=	0.21092755E 08	LONG	= 0.19745662E 03	FPAJ	= -0.38685336E 01
12	Z	=	-0.38451977E 07	ZD	=	0.60776114E 04	RDOT	=	-0.75850184E 03	FLP	= -0.47852725E 04	PSIV	= 0.57387935E 02
10	XL	=	0.17827077E 08	TAG	=	0.60000000E 01	GLOAD	=	0.15810290E 01	FLY	= 0.27183284E 04	VA	= 0.10094227E 05
8	YL	=	-0.10358346E 08	ROLL	=	-0.60400766E 02	ACC	=	0.52068599E 02	RTGN	= -0.11307653E 01	FPAF	= -0.43265649E 01
6	ZL	=	-0.35758184E 07	RLDOT	=	0.	DRAG	=	0.13758666E 05	RTGL	= 0.76405669E 02	PSAV	= 0.52949770E 02

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10 APR. 1971 19 HR 31 MIN 44.84 SEC. TMSI 940320.4844 J.D. 2441052.3136 10 DAY 21 HR 12.0 MIN

X = 0.17755329E 08 XD = 0.50558776E 04 ALT = 0.16537475E 06 LAT = -0.10491743E 02 V1 = 0.11068947E 05

Y = -0.10720523E 08 YD = 0.78950833E 04 R = 0.21088805E 08 LONG = 0.19756618E 03 FPAI = -0.42555510E 01

Z = -0.38152822E 07 ZD = 0.58845007E 04 RDOT = -0.82137238E 03 FLP = -0.54869279E 04 PSIV = 0.58106046E 02

X1 = 0.17830853E 08 TAG = 0.60000000E 01 GLOAD = 0.17534951E 01 FLY = 0.26812074E 04 YA = 0.98214069E 04

Y1 = -0.10351845E 08 ROLL = -0.63957383E 02 ACC = 0.56997735E 02 RIGN = -0.11117936E 01 FPAA = -0.47972943E 01

Z1 = -0.35758184E 07 RLDOT = 0. DRAG = 0.15267460E 05 RIGL = 0.68000081E 02 PSAV = 0.53422696E 02

10 APR. 1971 19 HR 31 MIN 49.84 SEC. TMSI 940325.4844 J.D. 2441052.3137 10 DAY 21 HR 12.0 MIN

X = 0.17780131E 08 XD = 0.48630708E 04 ALT = 0.16108225E 06 LAT = -0.10413573E 02 V1 = 0.10817659E 05

Y = -0.37863945E 07 YD = 0.56659354E 04 RDOT = -0.86190099E 03 FLP = -0.62908756E 04 PSIV = 0.58716760E 02

Z = -0.10681211E 08 TAG = 0.60000000E 01 GLOAD = 0.19541172E 01 FLY = 0.26045290E 04 YA = 0.95622422E 04

X1 = -0.17834626E 08 ROLL = -0.67509616E 02 ACC = 0.62880742E 02 RIGN = -0.10549810E 01 FPAA = -0.52917598E 01

Y1 = -0.10345343E 08 RLDOT = 0. DRAG = 0.17021804E 05 RIGL = 0.60159554E 02 PSAV = 0.53985209E 02

Z1 = -0.35758184E 07 RLDOT = 0.

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10 APR. 1971 19 HR 31 MIN 54.84 SEC. TMSI 940330.4844 J.D. 2441052.3138 10 DAY 21 HR 12.1 MIN

X = 0.17803944E 08 XD = 0.46594755E 04 ALT = 0.15649525E 06 LAT = -0.10338774E 02 V1 = 0.10537009E 03

Y = -0.10642277E 08 YD = 0.77432258E 04 R = 0.21079922E 08 LONG = 0.1977684E 03 FPAI = -0.31180172E 01

Z = -0.37586103E 07 ZD = 0.54185141E 04 RDOT = -0.93999084E 03 FLP = -0.72001052E 04 PSIV = 0.59337819E 02

X1 = 0.17838397E 08 TAG = 0.60000000E 01 GLOAD = 0.21832438E 01 FLY = 0.24640651E 04 YA = 0.92724637E 04

Y1 = -0.10338846E 08 ROLL = -0.71101705E 02 ACC = 0.69755043E 02 RIGN = -0.96335274E 03 FPAA = -0.58183196E 01

Z1 = -0.35758184E 07 RLDOT = 0. DRAG = 0.19025170E 05 RIGL = 0.52567345E 02 PSAV = 0.546555361E 02

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10 APR. 1971 19 HR 32 MIN 14.84 SEC TMSI 940350.4844 J.D. 2441052.3140 10 DAY 21 HR 12.5 MIN

X = 0.17887789E 08 XD = 0.36658822E 04 ALT = 0.13545825E 06 LAT = -0.10082931E 02 VI = 0.89856642E 04

Y = -0.10492566E 08 YD = 0.71424038E 04 R = 0.21059064E 08 LONG = 0.19816917E 03 FPA1 = -0.73326870E 01

Z = -0.36629539E 07 ZD = 0.40360297E 04 R001 = -0.11468444E 04 FLP = -0.12631333E 05 PSIV = 0.64077965E 02

X1 = 0.17853456E 08 TAG = 0.60000000E 01 GLOAD = 0.36145082E 01 FLY = 0.29474459E 03 YA = 0.76672164E 04

Y1 = -0.10312813E 08 R011 = -0.88663279E 02 ACC = 0.11453468E 03 RIGN = -0.30748783E-00 FPA2 = -0.86024499E 01

Z1 = -0.35758184E 07 RLD001 = 0 DRAG = 0.31586930E 05 RIGL = 0.25022546E 02 PSAV = 0.59075315E 02

10 APR. 1971 19 HR 32 MIN 19.84 SEC TMSI 940355.4844 J.D. 2441052.3141 10 DAY 21 HR 12.5 MIN

X = 0.17905337E 08 XD = 0.33479524E 04 ALT = 0.12957500E 06 LAT = -0.10032784E 02 VI = 0.84610427E 04

Y = -0.10457446E 08 YD = 0.68977901E 04 R = 0.21053201E 08 LONG = 0.19825652E 03 FPA1 = -0.81407393E 01

Z = -0.36439012E 07 ZD = 0.35778418E 04 R001 = -0.11981271E 04 FLP = -0.141176405E 05 PSIV = 0.65004705E 02

X1 = 0.17857215E 08 TAG = 0.60000000E 01 GLOAD = 0.40584112E 01 FLY = -0.38438791E 03 YA = 0.71243062E 04

Y1 = -0.10306303E 08 R011 = -0.91553172E 02 ACC = 0.12837728E 03 RIGN = -0.132468552E-00 FPA2 = -0.96815873E 01

Z1 = -0.35758184E 07 RLD001 = -0.36354467E 01 DRAG = 0.35654039E 05 RIGL = 0.19081499E 02 PSAV = 0.60038133E 02

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10 APR.	1971	19	HR	32	MIN	29.84	SEC	TMST	940365.4844	J.D.	2441052.3142	10	DAY	21	HR	12.7	MIN	
X	=	0.17935156E 08	XD	=	0.25829868E 04	ALT	=	0.11696600E 06	LAT	=	-0.99532284E 01	VI	=	0.72334186E 04				
Y	=	-0.10391506E 08	YD	=	0.62523890E 04	R	=	0.21040625E 08	LONG	=	0.19841370E 03	FPAI	=	-0.10562370E 02				
Z	=	-0.36131280E 07	ZD	=	0.25608897E 04	RDOT	=	-0.13259272E 04	FLP	=	-0.15927363E 05	PSIV	=	0.70545053E 02				
XL	=	0.17864726E 08	TAG	=	0.60000000E 01	GLOAD	=	0.48813817E 01	FLY	=	-0.61134421E 04	VA	=	0.58598677E 04				
YL	=	-0.10293279E 08	ROLL	=	-0.11092843E 03	ACC	=	0.15609334E 03	RIGN	=	0.44102820E-01	FPAAA	=	-0.13077714E 02				
ZL	=	-0.35750184E 07	RLDDOT	=	0.	DRAG	=	0.422650842E 05	RTGL	=	0.86801713E 01	PSAV	=	0.65485009E 02				

10 APR.	1971	19	HR	32	MIN	34.84	SEC	TMST	940370.4844	J.D.	2441052.3142	10	DAY	21	HR	12.8	MIN	
X	=	0.17946940E 08	XD	=	0.211192939E 04	ALT	=	0.11011050E 06	LAT	=	-0.99244988E 01	VI	=	0.65365479E 04				
Y	=	-0.10361255E 08	YD	=	0.58360690E 04	R	=	0.21033782E 08	LONG	=	0.19848151E 03	FPAI	=	-0.12515253E 02				
Z	=	-0.36016276E 07	ZD	=	0.20433679E 04	RDOT	=	-0.14164668E 04	FLP	=	-0.14817432E 05	PSIV	=	0.7335228E 02				
XL	=	0.17868477E 08	TAG	=	0.60000000E 01	GLOAD	=	0.52231979E 01	FLY	=	-0.10680920E 05	VA	=	0.51509321E 04				
YL	=	-0.10286764E 08	ROLL	=	-0.12576537E 03	ACC	=	0.16797367E 03	RIGN	=	-0.22528907E-01	FPAAA	=	-0.15961550E 02				
ZL	=	-0.35750184E 07	RLDDOT	=	-0.41990363E 01	DRAG	=	0.45664426E 05	RTGL	=	0.43323244E 01	PSAV	=	0.68340997E 02				

10 APR.	1971	19	HR	32	MIN	39.84	SEC	TMST	940375.4844	J.D.	2441052.3143	10	DAY	21	HR	12.9	MIN	
X	=	0.17956220E 08	XD	=	0.15817769E 04	ALT	=	0.10271350E 06	LAT	=	-0.99028535E 01	VI	=	0.57893455E 04				
Y	=	-0.10333283E 08	YD	=	0.53365233E 04	R	=	0.21026394E 06	LONG	=	0.19854045E 03	FPAI	=	-0.15466505E 02				
Z	=	-0.35925856E 07	ZD	=	0.15924897E 04	RDOT	=	-0.15438815E 06	FLP	=	-0.77627699E 04	PSIV	=	0.76013950E 02				
XL	=	0.17872227E 08	TAG	=	0.60000000E 01	GLOAD	=	0.54387554E 01	FLY	=	-0.17364421E 05	VA	=	0.44090654E 00				
YL	=	-0.10280249E 08	ROLL	=	-0.15591295E 03	ACC	=	0.17609862E 03	RIGN	=	-0.23165357E-00	FPAAA	=	-0.20497140E 02				
ZL	=	-0.35750184E 07	RLDDOT	=	-0.16000000E 02	DRAG	=	0.47551532E 05	RTGL	=	0.63236528E 00	PSAV	=	0.70941905E 02				

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10 APR. 1971 19 HR 32 MIN 44.84 SEC TMSI 940380.4844 J.D. 2441052.3143 10 DAY 21 HR 13.0 MIN

X = 0.17962696E .08 XD = 0.10202024E .04 ALT = 0.94646750E .05 LAT = -0.98864909E .01 VI = 0.50020478E .04

Y = -0.10308117E .08 YD = 0.47146722E .04 R = 0.21018333E .08 LONG = 0.19858884E .03 FPAI = -0.19456173E .02

Z = -0.35853313E .07 LD = 0.132234559E .04 ROOT = -0.16661106E .04 FLP = 0.51424750E .03 PSIV = 0.77077972E .02

X1 = 0.17875974E .08 TAG = 0.60000000E .01 GLOAD = 0.54786577E .01 FLY = -0.19153484E .05 VA = 0.36628380E .04

Y1 = -0.10223732E .08 ROLL = 0.178466205E .03 ACC = 0.17495109E .03 RIGN = -0.53144506E .00 FPAA = -0.21056484E .02

Z1 = -0.35758184E .07 RLDOT = 0. DRAG = 0.47900967E .05 RIGL = -0.23726098E .01 PSAV = 0.71135314E .02

10 APR. 1971 19 HR 32 MIN 49.84 SEC TMSI 940385.4844 J.D. 2441052.3144 10 DAY 21 HR 13.0 MIN

X = 0.17966593E .08 XD = 0.55873159E .03 ALT = 0.86215150E .05 LAT = -0.98738668E .01 VI = 0.42235192E .04

Y = -0.10286202E .08 YD = 0.40491183E .04 R = 0.21009908E .08 LONG = 0.19862592E .03 FPAI = -0.23526339E .02

Z = -0.35793614E .07 LD = 0.10635629E .04 ROOT = -0.168571975E .06 FLP = 0.49586644E .03 PSIV = 0.78261161E .02

X1 = 0.17879719E .08 TAG = 0.60000000E .01 GLOAD = 0.52870984E .01 FLY = -0.18468869E .05 VA = 0.29444452E .04

Y1 = -0.10267213E .08 ROLL = 0.178466205E .03 ACC = 0.16471456E .03 RIGN = -0.87198088E .00 FPAA = -0.349227165E .02

Z1 = -0.35758184E .07 RLDOT = 0. DRAG = 0.46188813E .05 RIGL = -0.466628507E .01 PSAV = 0.70951609E .02

10 APR. 1971 19 HR 32 MIN 54.84 SEC TMSI 940390.4844 J.D. 2441052.3145 10 DAY 21 HR 13.1 MIN

X = 0.17968511E .08 XD = 0.23306562E .03 ALT = 0.77957500E .05 LAT = -0.98647829E .01 VI = 0.35020432E .04

Y = -0.10267601E .08 YD = 0.34017821E .04 R = 0.21001653E .08 LONG = 0.19865236E .03 FPAI = -0.27179244E .02

Z = -0.35746947E .07 LD = 0.79866495E .03 ROOT = -0.15996504E .06 FLP = -0.27247924E .04 PSIV = 0.80126820E .02

X1 = 0.17883461E .08 TAG = 0.60000000E .01 GLOAD = 0.47897595E .01 FLY = -0.16497167E .05 VA = 0.22974187E .04

Y1 = -0.10260694E .08 ROLL = 0.17062128E .03 ACC = 0.14407018E .03 RIGN = -0.12894611E .01 FPAA = -0.44129414E .02

Z1 = -0.35758184E .07 RLDOT = 0.49999999E .01 DRAG = 0.41801693E .05 RIGL = -0.62664295E .01 PSAV = 0.71098597E .02

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10 APR. 1971 19 HR 32 MIN 59.84 SEC TMST 940395.4844 J.D. 2441052.3145 10 DAY 21 HR 13.2 MIN

X = 0.17969176E 08	XD = 0.55094880E 02	GLT = 0.70356000E 05	LAT = -0.98592319E 01	VI = 0.26912792E 04
Y = -0.10222027E 08	YD = 0.28424674E 04	R = 0.20994054E 08	LONG = 0.19866983E 03	FPAI = -0.29652193E 02
Z = -0.35714097E 07	ZD = 0.52615473E 03	RDOT = -0.14304133E 04	FLP = -0.34316322E 04	PSIV = 0.83441177E 02
XL = 0.17867201E 08	TAG = 0.60000000E 01	GLOAD = 0.40760804E 01	FLY = -0.13802468E 05	VA = 0.17617672E 04
YL = -0.10254172E 08	ROLL = -0.16603795E 03	ACC = 0.11629756E 03	RIGN = -0.18609271E 01	FPAAA = -0.54283078E 02
ZL = -0.35758184E 07	RLDOT = 0.	DRAG = 0.35556664E 05	RTGL = -0.72464629E 01	PSAV = 0.73795942E 02

10 APR. 1971 19 HR 33 MIN 4.84 SEC TMST 940400.4844 J.D. 2441052.3146 10 DAY 21 HR 13.3 MIN

X = 0.17969250E 08	XD = -0.10214924E 02	ALT = 0.63705750E 05	LAT = -0.98565179E 01	VI = 0.24059837E 04
Y = -0.10223900E 08	YD = 0.23034249E 04	R = 0.20987405E 08	LONG = 0.19868037E 03	FPAI = -0.30673736E 02
Z = -0.35693050E 07	ZD = 0.32854111E 03	RDOT = -0.12274095E 04	FLP = -0.27890231E 04	PSIV = 0.86632113E 02
XL = 0.17890938E 08	TAG = 0.60000000E 01	GLOAD = 0.33115208E 01	FLY = -0.11217811E 05	VA = 0.13536188E 04
YL = -0.10247650E 08	ROLL = -0.16603795E 03	ACC = 0.87192937E 02	RIGN = -0.23866926E 01	FPAAA = -0.65861544E 02
ZL = -0.35758184E 07	RLDOT = 0.	DRAG = 0.26698306E 05	RTGL = -0.77635409E 01	PSAV = 0.77701679E 02

10 APR. 1971 19 HR 33 MIN 9.84 SEC TMST 940405.4844 J.D. 2441052.3146 10 DAY 21 HR 13.4 MIN

X = 0.17969194E 08	XD = -0.32176745E 01	ALT = 0.58070500E 05	LAT = -0.98555649E 01	VI = 0.26463332E 04
Y = -0.10228005E 08	YD = 0.20362953E 04	R = 0.20981770E 08	LONG = 0.19868599E 03	FPAI = -0.30219097E 02
Z = -0.35680048E 07	ZD = 0.20241242E 03	RDOT = -0.10298121E 04	FLP = -0.22570518E 04	PSIV = 0.89102655E 02
XL = 0.17894673E 08	TAG = 0.60000000E 01	GLOAD = 0.26796503E 01	FLY = -0.90781537E 04	VA = 0.10625792E 04
YL = -0.10241126E 08	ROLL = -0.16603795E 03	ACC = 0.62828615E 02	RIGN = -0.27710992E 01	FPAAA = -0.75734910E 02
ZL = -0.35758184E 07	RLDOT = 0.	DRAG = 0.23366316E 05	RTGL = -0.79814168E 01	PSAV = 0.83928843E 02

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10 APR. 1971 19 HR 33 MIN 14.84 SEC. IMST 940410.4844 J.D. 2441052.3147 10 DAY 21 HR 13.5 MIN
X = 0.17969278E 08 XD = 0.40915475E 02 ALT = 0.533162500E 05 LAT = -0.98555009E 01 VI = 0.17924116E 04
Y = -0.10218683E 08 YD = 0.17867310E 04 R = 0.20977062E 08 LONG = 0.19868806E 03 EPA1 = -0.28869311E 02
Z = -0.35671814E 07 ZD = 0.13659033E 03 R001 = -0.85854309E 03 FLP = -0.18555764E 04 PSIV = 0.90347585E 02
X1 = 0.17898406E 08 TAG = 0.60000000E 01 GLOAD = 0.22009276E 01 FLY = -0.14633680E 04 VA = 0.86112B30E 03
Y1 = -0.10234601E 08 R01 = -0.16603795E 03 ACC = 0.44168063E 02 RIGN = -0.29484603E 01 FPAA = -0.855558765E 02
Z1 = -0.35758184E 07 R001 = 0. DRAG = 0.19226451E 05 RIGL = -0.80472027E 01 PSAV = 0.98229678E 02

EY 2

08 0 0.9884250E 04 LESS THAN 5.000000E 04 -0. -0. -0.
61 700 4.9884250E 04 LESS THAN 5.000000E 04 -0. -0. -0.
20 -0 -0 -0 -0 -0 -0.

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